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THE JOURNAL  
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PUBLISHED BY  
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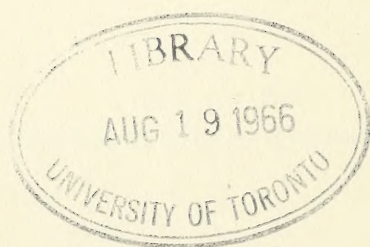
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# THE Journal of Home Economics

Vol. III

FEBRUARY, 1911

No. 1

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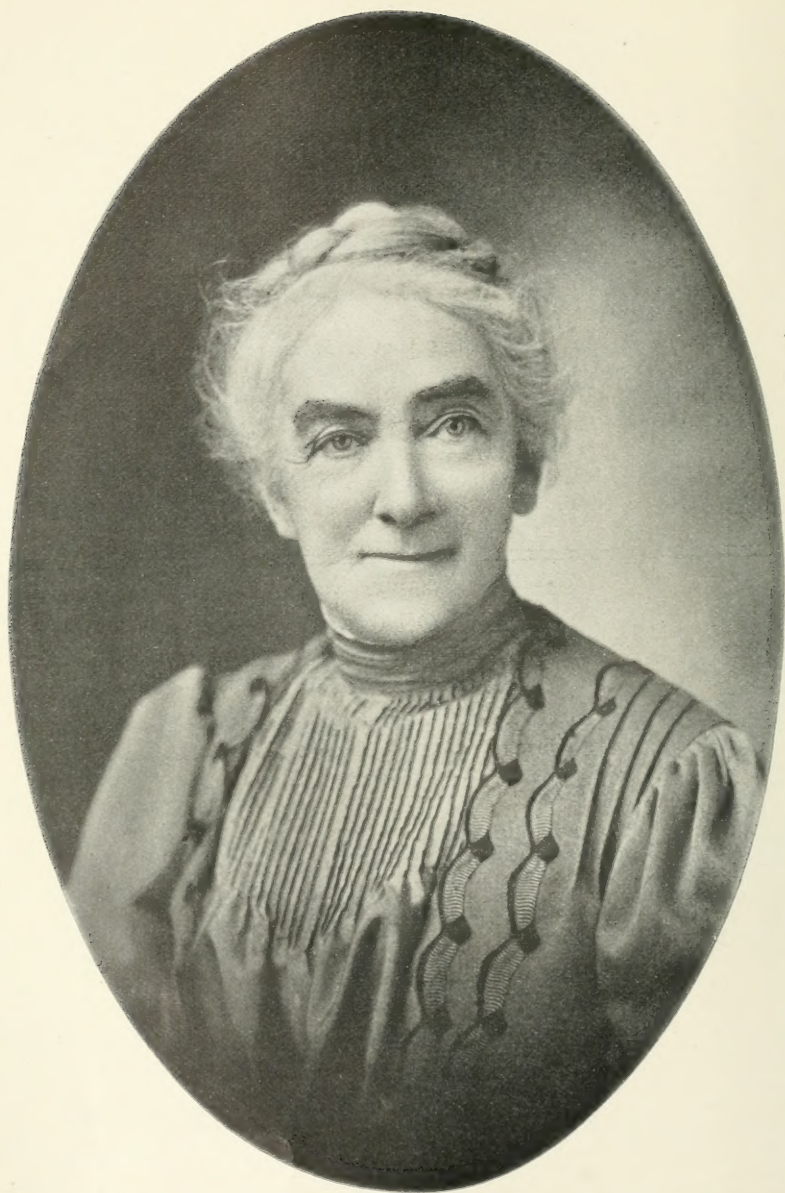
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*Ellen H. Richards*



# THE Journal of Home Economics

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VOL. III.

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## THIRD ANNUAL CONVENTION, AMERICAN HOME ECONOMICS ASSOCIATION.

The third annual meeting of the American Home Economics Association was held in St. Louis, December 27 to 30, 1910, and brought together somewhat over 100 delegates, principally from the Middle West, but with some coming from New England, Texas, and Minnesota. As in the preceding meetings, the attendance was primarily from the section of country nearest the place of meeting, but there was a scattering of delegates from far distant points, who made the meeting truly national in its character. The suggestion of one member, however, seems pertinent that the time may come when in such gatherings, it will be necessary to recognize sectional lines and to provide, possibly, for simultaneous meetings in the East and in the West, with a joint national meeting in alternate years.

Certain general features of the St. Louis meeting were obvious to all who attended. First of all the purpose of the Association in placing the meeting at St. Louis had been to secure the coöperation of the economic and social science associations which were to meet in St. Louis during the holidays, viz. the American Sociological Society, American Statistical Association, American Political Science Association, American Association for Labor Legislation, and the American Economic Association. This purpose was successfully accomplished.

It was with the Economic and Sociological Associations, especially, that coöperation had been sought, and the officers of these associations were most kind in extending hospitality to our members, while several of their members took a prominent part on the Home Economics program. Last year at the Boston convention, which met with the American Association for the Advancement of Science, there

appeared on the Home Economics program papers by prominent chemists, physiologists, physicists, and others who pointed out the relationship of the natural sciences to household science, made suggestions regarding the development of courses of study, and in various ways brought to bear the results of their older sciences upon the newer field. A similar happy outcome was achieved at St. Louis.

Forming the most important item on the program were the two or three meetings in which the economists and sociologists presented papers. On Wednesday evening, Professor David Kinley, Dean of the School of Commerce at the University of Illinois, presented a paper describing a course in applied economics which he had given at the University of Illinois for a number of years for the benefit of students in the department of household science. A discussion of this paper by Professor Frank Fetter of Cornell University was a contribution from one who has always been interested in the development of college instruction in household science. On the following evening Professor George E. Howard of the University of Nebraska gave a masterly survey of courses in sociology, pure or applied, which might be included in a college school of household science. Professor Howard's outline provided for undergraduate and graduate instruction, and sets an ultimate goal which, like the suggestions of Professor Kinley will be of the utmost help to those who have in charge the development of collegiate instruction in household science. Professor Ellwood of the University of Missouri, and Mrs. Anna Garland Spencer, of the University of Wisconsin, gave further contributions on the sociological program.

Many additional papers on economic and sociological subjects appeared elsewhere on the program and were of the greatest interest, and point the way toward the development of profitable research and teaching in the application of economics to the household. Altogether the emphasis which the program placed upon economics and social topics marked a distinct advance upon any previous meeting of the Association.

Another aspect of the meeting which could not fail to impress an observer was the interest shown by the organized club women of St. Louis in the meetings of the Association. The emphasis on economic topics indicated an effort to put a sound scientific foundation underneath instruction in household science, while the effort to translate the lessons of science into a practical outcome for the housewife proved that Home Economics realizes its ultimate purpose.

On the first evening at the convention, a meeting was held in the Wednesday Club Auditorium at which different members of the Association, in brief informal addresses, presented different aspects of Home Economics as a practical movement for the betterment of household management. The topics and speakers were as follows: Home Economics and the Home, by Miss Bevier; Nutrition, by Dr. Langworthy; The Campaign for Honest Food, by Mrs. Walter McNab Miller; Housing and Sanitation, by Miss Berry; Textiles, by Miss Crooks; Home Economics and the Institution, by Miss Corbett; and a summary, *When Women's Work is Ordered by Science*, by Mrs. Richards.

Although disagreeable weather prevented a large attendance, all who were present gained a new sense of values. The Wednesday Club is one of the largest women's clubs in the country, with an active science section which is this winter studying problems of the household. The members of the club were therefore interested from the first in the meetings of our Association, and the club organization was most courteous in extending every hospitality to our members. The club rooms were placed at the disposal of members of the Association and at the close of the Tuesday evening meeting, a very pleasant informal reception was given our delegates.

On Friday afternoon at the close of the convention the Wednesday Club tendered a reception to Mrs. Richards, President of the Association, to which our members were cordially welcomed. The President of the General Federation of Women's Clubs, Mrs. Philip N. Moore of St. Louis, was constant in her efforts to make our meetings a success, serving as a member of the local committee and assisting in many of the arrangements. Altogether the assistance which the club women of St. Louis gave to the meetings contributed a great deal to their success, and the Association can only hope that the meetings proved of as much interest to them.

Another aspect of the St. Louis meeting which must have impressed every one, was the length and general excellence of the program. A two-day meeting had been tried last year in Boston and proved entirely inadequate. This year, therefore, a program extending over four days was arranged. While many persons felt it a hardship to leave home for so long a time at Christmas, and the question was raised continually whether a summer meeting would not be preferable, all found the extended program full of interest from first to last.



On the first day, after an opening address by Superintendent Blewett, of the St. Louis schools, and a paper by Dean Charters, of Teachers College, University of Missouri, on the Effect of the Point of View in Teaching Domestic Science, two section meetings were held; one on Home Economics and elementary education, the other on chemistry and dietetics, the latter of which presented a long series of scientific papers, 15 titles in all, besides a review of progress in nutrition by Dr. C. F. Langworthy. One must place emphasis upon the significance of so impressive a list of scientific papers, not alone in chemistry and dietetics, but at other points in the program, as in the administration section, the child welfare section, and the section on textiles. If the members of the Association will increasingly turn their attention to original research and constructive writing, the question whether Home Economics is a science will be answered once and for all.

Tuesday evening there was the meeting of the club women referred to above. Wednesday morning the administration section gave a very interesting program, beginning at 9 o'clock, including papers by Dr. Rubinow and Mr. Lebovitz on Household Service and Labor Saving Machinery, the outline of a thesis investigation by Mr. Leeds on The Economic Value of Housework, an interesting paper on European Household Thrift, by Miss Edith Talbot Jackson, a paper on The Use of a Residence Hall in Training Students in Management, by Miss Martha Bell of the College of Industrial Arts, Denton, and a statement of the Yale College Dining Hall by Miss Josephine T. Berry.

Wednesday morning there was a meeting on Methods of Instruction in Food Preparation with contributions from various universities, which raised questions of utmost importance and demanding further consideration. The annual luncheon occurred Wednesday noon and gave the delegates the opportunity of hearing from several interesting speakers including Mrs. Ware of the Warelands Dairy near Boston, Professor Fetter of Cornell, Mr. Knox, Assistant Superintendent of Schools, St. Louis, and others. Following the luncheon, a section meeting on child welfare was held at which there was given a report of the committee which has been investigating courses for the training of the professional child nurse, and a helpful series of papers on child care. It is evident that this topic of the care of the normal child is already finding its way into the elementary school, the high school, and the college, in connection with Home Economics teaching. Two research papers on this program by Miss Louise Stanley and Miss Amy L. Daniel encouraged those who are mindful of

the fact that progress in any field depends absolutely upon scientific knowledge.

Thursday morning a program on housing and sanitation was provided with papers on housing reform by Lawrence Veiller, Secretary of the National Housing Association, The Moderate Priced House, by Professor Mann of the University of Illinois, and Some Results of Investigation as to Household Equipment, by Helen Louise Johnson of the *Good Housekeeping* Magazine. A discussion of courses of instruction in housing and sanitative followed. A section meeting of those interested in administrative problems was made especially interesting by a discussion by Dr. Winthrop Talbot of the new openings in factory welfare work.

Thursday afternoon after the annual business meeting, a spirited discussion of extension work in rural communities and among women's clubs was held with Miss Bouton of the University of Nebraska as chairman and with discussions by several persons actively engaged in such work. Thursday's program concluded with the evening program on courses in sociology referred to above. Friday morning Instruction in Economics in the High School was presented, with papers on The Training of Girls as Consumers, by Miss Hanna of the University College, Chicago, The Development of Individual Responsibility through a Study of Social Problems, by Miss S. P. Breckenridge of the University of Chicago, and Professor Cole's paper on The Relation of Home Economics to General Economics. The economic program was continued under the direction of Miss Breckenridge, with discussions, in the afternoon, on cost accounting by Mrs. Richards, Knowledge of the Industrial System as a Basis for Consumer's Responsibility, by Miss Edna D. Day, and the Knowledge of the Productive System, by Miss Anna R. Van Meter.

Friday morning, one of the most interesting sections, that on textiles, occurred. Although hindered by lack of time, the papers on the Course of Study in Textiles, by Miss Marlatt and Miss Crooks, which gave the results of an investigation into the actual offering in textiles in different universities, attracted much attention. Other papers on this program were Miss Craig's paper on Textile Experimentation; Miss Fales' A Course in Historic Costume; Miss Winchell's, The Textile Testing Laboratory of the United States Army; A Study of Bluings, by Miss Balderston and Miss McKeown; and Miss Denny's Some Textile Tests.

The business session of the Association showed that its activities

are increasing in every way. Particularly pleasing was the series of reports from affiliated societies. Some of these associations are local organizations like the Home Economics Club of Grand Rapids and the New York City Association; others are state organizations, like those of Ohio and Iowa; still others are inter-state organizations, like the New England Association and that which is being organized in the mountain states of the West. Everywhere, however, there is manifest a tendency for workers in the Home Economics field to get together in whatever form may be most convenient, and exchange experience.

The report of the Editor of the JOURNAL OF HOME ECONOMICS brought home to the members of the Association a most acute problem which faces the organization. The JOURNAL, no longer being a privilege of membership, needs the support of every member of the Association in order to continue its growth and assure its future. So long as the burden of editorial management must be borne by voluntary helpers it means that every member of the Association should consider himself personally responsible for whatever coöperation he can give, whether in contributions for the JOURNAL, or in extending its subscription list, or in securing school or other advertisements for its pages.

The one item in the proceedings which will attract the attention of every member is the retirement of Mrs. Ellen H. Richards from the active presidency of the Association. Mrs. Richards had notified the committee on nominations that it seemed wise to her not to assume again the active presidency and, at the recommendation of the committee, the Association unanimously elected Mrs. Richards honorary president, and asked that she continue her active coöperation in all matters of Association business as far as it seemed wise for her to do.

The choice of Miss Bevier as active president of the Association was unanimously made and the Association may congratulate itself on having one at the helm who has been so identified with the Lake Placid Conference and the American Home Economics Association through all of their history.

While this is not the place to make an extended statement of the services of Mrs. Richards in connection with these organizations, one cannot omit in passing an expression of the feeling of regard which every member of the Association has for her, and also the dependence which the Association must still have upon her ripe wisdom and un-failing activity in all that concerns its welfare.

BENJAMIN R. ANDREWS.



## MINUTES OF THIRD ANNUAL MEETING, AMERICAN HOME ECONOMICS ASSOCIATION.

The Third Annual Meeting of the American Home Economics Association was called to order on Thursday, December 29, 1910, at 1:30, at the W. T. Harris Teachers College, with the President of the Association, Mrs. Ellen H. Richards, in the chair.

Reports were given from the Home Economics Club of Grand Rapids, Michigan, the Ohio State Home Economics Association, the Nebraska Home Economics Association, the New England Home Economics Association, and the Home Economics Association of Greater New York.

It was voted that the appreciation of the American Home Economics Association be expressed to the Home Economics Association of Greater New York, for the quarterly bibliography of periodical literature in Home Economics, which that association has published during the past two years; and that the American Association approve the request of the New York Association that the bibliographical material prepared by the New York Association be, as far as practicable, included in the JOURNAL OF HOME ECONOMICS.

There was reported from the Home Economics Association of Greater New York a request that the American Association appoint a committee to consider terminology in Home Economics. It was voted that a committee be appointed by the President of the American Association to consider nomenclature in domestic science and domestic art in elementary and secondary schools, the committee to consist of the President and four members and to make a report at the San Francisco meeting of the National Education Association in July, 1911. Subsequently the committee was announced as consisting of Mrs. Richards; Mr. George P. Knox, assistant superintendent of schools, St. Louis; Miss Rosa Bouton of the University of Nebraska; Miss Mary Wright, director of domestic economy, public schools, Philadelphia; and Dr. A. C. True of the U. S. Department of Agriculture, Washington, D. C.

The Secretary presented a letter of greetings from Miss Alice Ravenhill, who recently came to America and is making her home in



Vancouver, British Columbia. The Secretary was directed to extend the greetings of the Association to Miss Ravenhill and express the hope that she might be present at the next convention. A similar letter was presented from Miss Mary Urie Watson, a Vice-President of the Association, and the Secretary was directed to convey to her the greetings of the Association and its regrets at her absence.

Miss Craig of the College of Industrial Arts, Denton, Texas, reported the probability of an organization of a State Home Economics Association in Texas in connection with the State Teachers Association. Miss Crooks of Milwaukee-Downer College reported that a State Home Economics Association has been organized in Wisconsin, with Miss Abby L. Marlatt, of the University of Wisconsin, as president.

The President presented a report from Miss Huntington of the Agricultural College of Utah regarding the organization of an Interstate Home Economics Association in the mountain states, at a preliminary meeting held last February.

*Committee on Affiliated Societies:*—The Committee on Affiliated Societies through its Chairman, Miss Van Rensselaer of Cornell University, reported that there were opportunities for important work in connection with women's club organizations and other national organizations which are related to the Home Economics field, but that it was difficult to make progress without funds for the preparation and circulation of printed material. This report was accepted, and the committee continued with authority to collect and expend funds.

*Committee on Course of Study in Home Economics in Agricultural Colleges:*—Miss Bevier reported that this committee, which consists of Professor Jaffa, Miss Day, Miss Huntington, Mrs. Van Zile and Miss Bevier, held a meeting in Chicago with Dr. A. C. True of the Department of Agriculture, Chairman of the Committee on Courses of Study of the Association of Agricultural Colleges. At this meeting a course of study was drawn up which lays emphasis for the present on courses of instruction in food, clothing and shelter. The report of the committee was accepted, the committee was continued and its full report was ordered published in the JOURNAL OF HOME ECONOMICS. (See page 25.)

*Committee on College Entrance Requirements:*—This committee, composed of Miss Jennie Snow, Miss Edna Day and Miss Louise Stanley, appointed by the President, reported that they had had a preliminary meeting with Mr. William M. Butler, President of the Yeatman High School in St. Louis and Chairman of the Committee on College

Entrance Requirements of the American Federation of Teachers of Mathematical and Social Sciences. It was voted that the committee be made permanent with power to increase its membership, and that it be directed to bring in a report on college entrance requirements in Home Economics at the next meeting of the Association.

*Committee on Administration and Administration Section:*—The President reported that a Committee on Administration had been appointed at the close of the Second Annual Convention, composed of Mrs. Annie Dewey, Miss Adelaide Nutting and the Secretary of the Association; that this committee had organized a sectional conference at Lake Placid, in June, 1910, on household institution management, which was attended by some fifty persons; that the Lake Placid meeting had provisionally organized as an administrative section of the American Home Economics Association, with a Chairman, Secretary and Committees, and that the following request is now presented from the Executive Committee of the Section Association: "It is requested that the American Home Economics Association recognize the organization of the Administration Section comprising two divisions,—Home and Institution Management; and that the Association provide a form of organization for the Administration Section and such other sections as may from time to time be authorized. It is suggested that the sectional organization shall provide for proper officers, including a chairman, secretary and such committees as the section shall from time to time authorize."

The request of the Administration Section as to the organization of sections was referred to the Executive Committee for consideration.

*Committee on Legislation:*—Miss Bouton reported for this committee the following resolution:

RESOLVED: That the American Home Economics Association, recognizing the imperative need of better housekeeping and the importance of the work which the United States Bureau of Education carries on in improving the means of public education, recommends most earnestly to the consideration of Congress the request of the United States Bureau of Education for the addition to its staff of a specialist in education for housekeeping.

*Graduate School of Home Economics:*—Dr. C. F. Langworthy presented a report on the Graduate School of Home Economics. This report has already appeared in the JOURNAL for October, 1910 (pp. 425-8), with the exception of its closing paragraph, which is as follows:

After the close of the school the matter of taking over the Graduate School of Home Economics was duly referred to the committee of the Association of Agricultural Colleges and Experiment Stations which has the Graduate School of Agriculture in charge. The committee recognized the importance of the Graduate School of Home Economics and the desirability of uniting the two schools, for they fully appreciate that Home Economics is an important part of the curriculum in a large number of the agricultural colleges. Unfortunately, at this time they do not see their way clear to take over the Graduate School of Home Economics owing to the fact that the development of the Graduate School of Agriculture, normal and logical though it has been, is such that the available funds are no longer adequate for its proper maintenance, and the committee is trying to devise some way of meeting the situation which arises in connection with the next meeting of its school. Dr. True, speaking for the committee, says they believe thoroughly in the desirability of continuing the Graduate School of Home Economics, and suggests that it be taken over by the American Home Economics Association and held in 1912 on something the same lines as heretofore. He promises the coöperation of the Graduate School of Agriculture in so far as possible and hopes that should those who are interested in the matter remain of the same mind Home Economics courses can eventually be provided in the Graduate School of Agriculture, in accordance with the proposal made to the Association of Agricultural Colleges and Experiment Stations.

It was decided that the American Home Economics Association take over the Graduate School of Home Economics, with the understanding that the School shall, in large part, be self-supporting. The School is to be administered through a Committee on Graduate School, consisting of Mrs. Ellen H. Richards, Miss Caroline L. Hunt, Mrs. Alice P. Norton, Miss Edna Day, Miss Abby L. Marlatt, Miss Martha Van Rensselaer, Dr. C. F. Langworthy, and Mrs. Alice D. Feuling, which was authorized to make plans for the next session. The thanks of the Association were tendered to Dr. True for his kindness and coöperation in making successful the meeting of the Graduate School of 1910.

*Report of the Treasurer:*—The report of the treasurer (see page 19) was read and was referred to the Finance Committee as a Committee on Audit.

*Finance Committee's Report on Budget:*—The Finance Committee reported that since the Executive Committee had arranged that certain postage and stationery expenses should be met by the JOURNAL office, the only expenses remaining for the Association to meet were those of the annual meeting and small incidental expenses. On the basis of this year's expenditures, this sum should be at least \$350, which it was the judgment of the committee could not be provided with the annual fee only twenty-five cents. With the annual fee \$1.00 it

would be possible to meet current expenses, to contribute somewhat to committee expenses, and to give some assistance to the JOURNAL if necessary. The committee therefore recommended an advance to \$1.00 for the annual fee, the distribution of the income for 1911-1912 to be left in the hands of the Executive Committee.

*Amendments to the Constitution and Bylaws:*—Due notice having been given of intention to amend the constitution and bylaws, the following recommendation from the Executive Committee was unanimously adopted:

RESOLVED, That Article VI of the Constitution be amended to read, "The Association shall issue a professional Journal which shall be the property of the Association," omitting words "and shall be sent to members as a privilege of membership."

It was also unanimously voted that Article III of the Bylaws, be amended in Section III, to read: "(1) annual, dependent on payment of dues, \$1.00."

The action of the Executive Committee in temporarily reducing the membership fee to twenty-five cents, and in effecting the separation of the subscription to the JOURNAL from the membership dues, was unanimously approved and that Executive Committee authorized to put the \$1.00 fee into effect as soon as possible.

*Proposed Amendment to the Constitution:*—Notice was given of a proposed amendment to the constitution, separating the office of the Secretary from that of the Treasurer.

*Annual Meeting:*—A communication from the Executive Committee of the Administration Section recommending that the Annual Convention be held the last week of June, and that the program extend over a week, providing at least two meetings a day for each section, besides general meetings, was received, and the request referred to the Council for adjustment.

#### ADJOURNED MEETING.

The meeting was resumed at 1:30 p.m., December 30.

*Editor's Report:*—The report of the Editor of the JOURNAL OF HOME ECONOMICS was read and the following resolution was unanimously adopted:

RESOLVED, That we express our appreciation of the difficulties with which the Editor of the JOURNAL OF HOME ECONOMICS has been confronted, and our deep gratitude for her able editorship under these conditions.

*Management of the Journal:*—The Executive Committee was authorized to make any adjustments necessary with regard to subscrip-



tion rates, editorial management, advertising, and other matter in connection with the publication of the JOURNAL OF HOME ECONOMICS upon a self-supporting basis. The committee was also authorized to arrange for clerical assistance, in connection with the membership records of the Association.

*Committee on Audit:*—The Financial Committee reported that an examination of the accounts of the Treasurer indicated that these were correct. Both the reports of the Treasurer and of the Committee were approved. The Executive Committee was given increased authority as to the depositing of funds.

*Resolutions:*—The Committee on Resolutions through its chairman, Mr. LeBosquet, reported resolutions tendering the appreciation and thanks of the Association to Mr. George Platt Knox, Assistant Superintendent of Schools, St. Louis, and Chairman of the Local Committee, whose wise preliminary plans and careful supervision contributed much to the success of the meeting; to each member of the Local Committee and to the various local organizations who have coöperated with it; to Mrs. Washington E. Fischel for making arrangements for the annual luncheon; to Mrs. E. R. Kroeger, President of the Wednesday Club, and to the Club for its hospitality and many courtesies extended to our delegates; to Miss Abby L. Page, Chairman of the Committee on Accommodations; to Miss Roberta McCulloch, who prepared the list of places of interest; to Miss Schmitz, Miss Buschman, Miss Denton and Miss Flickner, and others who gave their services in connection with the registration of delegates; and to the Board of Education of the St. Louis public schools for tendering the use of the W. T. Harris Teachers College for the meetings.

Thanks were also extended to Dean Kinley of the University of Illinois, and Professor Fetter of Cornell University, Professor Howard of the University of Nebraska, and Professor Ellwood of the University of Missouri, and Mrs. Spencer of the University of Wisconsin, for their papers; to Dr. Bishop for her services as Chairman of the Child Welfare section; to Superintendent Blewett of the St. Louis Public Schools for his address of welcome; to Dean Charters of the University of Missouri, Mr. Veiller, Secretary of the National Housing Association, Professor Mann of the University of Illinois, Dr. Rubinow, U. S. Department of Commerce and Labor, and Mr. Lebovitz of the Library of Congress, for addresses and papers before the Association; and to the officers and members who had in charge the arrangements for the convention, and to all who contributed to the program.

*Program Committee:*—The President was instructed to designate a Committee on Program which shall have entire charge of the program of the succeeding meeting. It was requested that suggestions regarding programs be sent to the President in advance of the annual meetings.

*Committee on Child Care:*—The report of the Committee on Child Care was received and with it a recommendation from the sectional meeting on child welfare requesting the continuance of the committee and urging that it pursue its investigation not only into professional courses in training, but also examining the possibilities of non-professional instruction in elementary schools, high schools and colleges. The thanks of the Association were tendered the committee for the survey of the field which they have prepared and the committee was continued.

*Election of Officers:*—The Nominating Committee, through H. C. Sherman, chairman, presented the following nominations for terms of one year: President, Miss Isabel Bevier, University of Illinois, Urbana, Illinois; First Vice President, Dr. C. F. Langworthy, U. S. Department of Agriculture, Washington; Second Vice President, Mrs. Mary Schenck Woolman, Teachers College, New York City; Third Vice President, Miss Martha Van Rensselaer, Cornell University, Ithaca, N. Y.; Secretary-Treasurer, Dr. Benjamin R. Andrews Teachers College, Columbia University, New York City. For terms of five years, members of the Council, Mrs. Ellen H. Richards, Massachusetts Institute of Technology, Boston, Mass.; Miss Marion Talbot, University of Chicago, Chicago, Illinois; Miss Mary Urie Watson, MacDonald Institute, Guelph, Ontario, Canada; Miss Adelaide Nutting, Teachers College, New York City; Miss Ednah Rich, State Normal School, Santa Barbara, California; and for member of the nominating committee, Miss Susanna Usher, University of Illinois, Urbana Illinois.

These nominations were accepted and the nominees duly elected. The convention then adjourned, *sine die*.

## MEETING OF THE COUNCIL.

MINUTES OF THE MEETING OF THE COUNCIL OF THE AMERICAN HOME ECONOMICS ASSOCIATION, AT 10:30 A.M., DECEMBER 27, 1910, AT THE W. T. HARRIS TEACHERS COLLEGE, ST. LOUIS.

In the absence of a quorum no formal business was transacted; but a discussion of the business of the Association was had, and recommendations were made to the annual business meeting of the Association.

The report of the Editor of the JOURNAL OF HOME ECONOMICS was read. A proposal to begin the volume of the JOURNAL in the fall instead of January 1 was referred to the Executive Committee of the Association.

The provisional action of the Executive Committee in separating the dues from the subscription to the JOURNAL was discussed and the recommendation was made to the annual meeting that the amendment to the constitution providing for the separation of dues and subscription be adopted. On motion it was voted that in the opinion of those present the dues of the Association should be increased beyond the \$0.25 amount provisionally adopted by the Executive Committee.

It was recommended to the annual meeting that the Executive Committee be authorized to make any adjustment with regard to subscription rates, advertising, clerical assistance, and other matters concerned with the publication of the JOURNAL.

The matter of financial arrangements with regard to clerical assistance for the Editor of the JOURNAL OF HOME ECONOMICS and in connection with the subscriptions to the JOURNAL and the membership dues was discussed, and it was recommended to the Association that the Executive Committee be empowered to make suitable arrangements with regard to editorial assistance, clerical assistance with regard to subscriptions, and clerical assistance with regard to dues of the Association, and that the person so charged with work for the Association be authorized to act as an Assistant Treasurer of the Association under the direction of the Treasurer.

The report of the Graduate School of Home Economics was made through Dr. Langworthy, and on motion it was recommended to the annual meeting of the Association that the Association should take over the Graduate School of Home Economics as a division of the work of the Association.

The matter of committees to serve during the convention was discussed and at a subsequent session of the Association, the President of the Association announced the following temporary committees: *Committee on College Entrance Requirements*: Miss Jennie Snow, Miss Edna Day, Miss Louise Stanley; *Committee on Legislation*: Miss Rosa Bouton, with power to add others; *Committee on Finance*: Miss Isabel Ely Lord, Miss Anna VanMeter, Dr. C. F. Langworthy; and *Committee on Resolutions*: Mr. Maurice LeBosquet, with power to add others. These committees were asked to report at the annual meeting of the Association.

## REPORT OF THE SECRETARY.

*Membership:* The membership of the Association is now approximately 1500 as against 700 when the Association was organized in 1908, and 1250 one year ago at the time of the Boston Convention. The Executive Committee in November made effective the proposal considered at the Boston Convention to separate entirely the membership fee of the Association from the subscription to the JOURNAL OF HOME ECONOMICS. As a tentative arrangement the subscription to the JOURNAL was placed at \$2, and the membership fee at \$0.25, subject to final action by the Association at this Convention. The decision in November became necessary to meet the regulations of the Post Office Department, and the authority was based upon the action taken at Boston which referred the matter to the Executive Committee and the editorial board with power. What the outcome of this division of dues from membership will be upon membership of the Association and the subscription list of the JOURNAL cannot be foreseen.

*Publication of the Journal:*—The JOURNAL OF HOME ECONOMICS has been issued as a bi-monthly in five issues, with an extra sixth number in November reporting the conference on institutional management at Lake Placid. Contributions for the November issue were sought outside of the regular funds of the Association. Details regarding the JOURNAL are presented at length in the editor's report.

*Duties of Secretary and Treasurer:*—At the beginning of the Association one person performed the duties of secretary, treasurer, and editor. After six months the editorial work was transferred to another person while the secretary continued to care for the business records of the Association including the collection of dues and subscriptions. This situation continued through the first year and until the spring of 1910, when it seemed wiser to transfer the entire collection of dues and subscriptions to the Editor's office. This left to the treasurer certain duties involving the depositing of funds and the making of all payments. The experience of 1910 proved that it was impossible for a person undertaking the editorial duties as a piece of voluntary work also to carry the burden of the records of the Association, including care of card catalogues, the collecting and sending out bills, and the collection of dues and all the other details of the business side of the Association. It had already been found necessary to provide the editor with editorial assistance in the preparation of material for the press, in proof-reading, and in seeing the successive numbers through the printer's hands, and in November, 1910, the editorial board transferred the card catalogue and all business matters connected with the collection of dues, into the same hands, this action being of course subject to review and definite approval by the Annual Meeting of the Association.

Despite the withdrawing of these duties from the secretary's office it is evident that the growth of the Association makes necessary a further sub-division in the duties of the secretary and the treasurer. The secretary therefore recommends that the two offices be divided when proper constitutional action has been taken, and that the office of treasurer be established. This will leave the secretary's



office charged solely with the duties of correspondence during the year, and with secretarial duties at the annual meeting, a field extensive enough, however, to engage the best service which a voluntary official can give.

*The Conventions:*—The Association held two sectional conventions during the summer of 1910, one with a program of educational topics at the Boston meeting of the National Education Association, under the chairmanship of Miss Kinne of Teachers College; the other a section on household administration at the Lake Placid Club with a program on problems of institutional work, planned by a Committee composed of Mrs. Dewey of Lake Placid, Miss Nutting of Teachers College, and the Secretary of the Association. Both meetings were very successful. Several problems arise: (1) The Administration Section formed an organization with sectional officers, and its executive committee requests that we make formal provision for an Administration Section within the American Home Economics Association. (2) The Education Section did not form a permanent organization. There remains the question, however, whether an Education Section should not be formed parallel to the Administration Section. (3) The question of sections and their meetings is intimately involved in the question of the annual meetings of the whole Association. More than one meeting a year does not seem satisfactory. The Administration section makes a recommendation for 1911 that a summer meeting be held at which there shall be opportunity for sectional programs on administration, etc., and as well, general sessions. (4) Definite provision should be made as to the method of organizing programs. This has fallen up to the present upon the president or the secretary and such vigilance committees as it has been possible to organize. Definite arrangements for locating responsibility for programs should be provided for by this convention.

*Affiliated Societies:*—The affiliation of societies with the American Home Economics Association goes on apace. Societies have been organized in New York, Ohio, and Iowa during the past year, an organization is being formed in the Rocky Mountain States, and one is contemplated in Texas. The matter of the relationship of the Association to these local societies needs careful attention. Our Committee on Affiliated Societies offers one method of procedure. The problem involves not alone societies formerly affiliated with our Association, which in a way may be expected to take care of themselves, but the more pressing question of assistance which we can give to the women's club organizations, and our relationship to other societies, like the Infant Mortality Association, the Mothers' Congress, etc., which are in some way related to our field of interest. For the next year a possible policy would be to center our attention upon assistance to the women's clubs. Under affiliation should also be noted the fact that the Association took out membership in two international conferences in connection with the Brussels Exposition, the conference on Home Education in August, to which the President and Secretary of our Association contributed papers; and the Association on Hygiene and Alimentation and the Rational Feeding of Man, for which Dr. Langworthy collected a number of American papers, making the representation of American workers in nutrition one of the best. Dr. Langworthy attended the conference as a Government representative, and other members of our Association were present, though we had no official delegate.

*Legislation:*—Domestic science instruction is encouraged in certain states by legislation favoring its introduction into public elementary and high schools.

Our Association should gather the facts on this situation and urge the adoption of similar legislation in other states. Higher education in Home Economics received a great impetus during 1910 through the appropriation by the state legislature of New York of \$154,000 for a Home Economics building at Cornell University. Congress is again considering the Dolliver bill which embodies the original Davis bill for agricultural and Home Economics education; also the proposal of the U. S. Bureau of Education for an appropriation to provide a specialist in education for housekeeping on the staff of the Bureau. The Association has already taken action approving the Davis bill. The proposal of the Bureau of Education should have earnest consideration by this convention. This Association ought to throw strong and country-wide influence in favor of good legislation and against vicious proposals in its own field of work. The state associations may be relied upon to watch state legislation, and it is surely the duty of the American Home Economics Association to further suitable federal enactments.

BENJAMIN R. ANDREWS, *Secretary.*

## REPORT OF THE TREASURER.

The treasurer presented (1) a statement of the cash account for the year ended December 23, 1910; and (2) a statement of resources and liabilities on December 23, 1910.

### I. CASH STATEMENT.

December 23, 1909, to December 23, 1910.

| <i>Receipts.</i>                                   |                 |
|----------------------------------------------------|-----------------|
| Cash balance.....                                  | \$ 192.63       |
| Dues and subscriptions.....                        | 3190.06         |
| Contributions for Administration Section Fund..... | 49.90           |
| Total.....                                         | <hr/> \$3432.59 |

| <i>Expenditures.</i>                            |                 |
|-------------------------------------------------|-----------------|
| JOURNAL.....                                    | \$1816.65       |
| Postage and stationery.....                     | 200.76          |
| Conventions.....                                | 394.48          |
| Pamphlets.....                                  | 23.20           |
| Incidentals.....                                | 31.00           |
| Bank charges.....                               | 12.60           |
| Transfer to permanent fund.....                 | 150.00          |
| Charge against Administration Section fund..... | 20.00           |
|                                                 | <hr/>           |
| Cash on hand.....                               | \$2638.69       |
|                                                 | 793.90          |
|                                                 | <hr/> \$3432.59 |

## II. STATEMENT OF RESOURCES AND LIABILITIES.

*Resources.*

|                                             |          |
|---------------------------------------------|----------|
| Balance in general fund.....                | \$764.00 |
| Balance in administration section fund..... | 29.90    |
| Advanced payment on bills for 1911.....     | 50.78    |

*Accounts Receivable.*

|                                    |        |
|------------------------------------|--------|
| Dues of 90 members.....            | 180.00 |
| For Journals sold.....             | 52.50  |
| Inventory of Journals on hand..... | 500.00 |

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 \$1577.18
*Liabilities.*

|                                                    |          |
|----------------------------------------------------|----------|
| Printing Journals.....                             | \$731.60 |
| Clerical assistance.....                           | 93.16    |
| Programs for the St. Louis Convention.....         | 40.00    |
| Subscriptions (224) for 1911, paid in advance..... | 400.00   |
| Dues (53) for 1911, paid in advance.....           | 14.50    |

|                     |           |
|---------------------|-----------|
| Total.....          | \$1279.26 |
| Credit balance..... | 297.92    |

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 \$1677.18

|                                             |          |
|---------------------------------------------|----------|
| Permanent fund, three life memberships..... | \$150.00 |
|---------------------------------------------|----------|

BENJAMIN R. ANDREWS, *Treasurer.*

## PROGRAM OF THE THIRD ANNUAL CONVENTION, AMERICAN HOME ECONOMICS ASSOCIATION.

ST. LOUIS, DECEMBER 27-30, 1910.

TUESDAY, DECEMBER 27.

9:00 a.m. Meeting of Executive Committee.

10:30 a.m. Meeting of Council.

Opening Session:

2:00 p.m. Welcoming Address: Superintendent Blewett, St. Louis Public Schools.

Address: The Effect of the Point of View in Teaching Domestic Science. Dean  
W. W. Charters, Teachers College, University of Missouri.

3:00 p.m. Section Meeting: Home Economics in Elementary Education. Mrs.  
Alice P. Norton, University of Chicago, Chairman.

1. Some Problems in the Elementary School. Miss Mildred Weigley, De Kalb  
Township High School, Ill.

2. From the Standpoint of the Grade Teacher. Miss Melva Latham, University  
Elementary School, University of Chicago.

3. The Effect on the Home. Miss Charley Tidd, University of Missouri.

3:00 p.m. Section Meeting: Chemistry and Dietetics. Miss Edna D. Day, Uni-  
versity of Kansas, Chairman.

1. Research Papers, Abstracts and Titles: Further Contributions on Jelly  
Making. Miss N. E. Goldthwaite, University of Illinois.

(2) A Study of Flavor of Meat. Miss Elizabeth Sprague, University of  
Chicago.

(3) Studies in Methods of Food Preparation. Miss Elizabeth Sprague, Uni-  
versity of Chicago.

(4) The Proportion of Flour in its Relation to Certain Characteristics in  
Bread. Misses Ida Shilling and Frances Freeman, University of Ohio.

(5) The Leavening Agent in Salt-rising Bread. Miss Winona Woodward,  
University of Missouri.

(6) Changes in the Phosphorus Compounds of Meat During Cooking.  
Miss Louise Stanley, University of Missouri.

(7) The Nutritive Value of Seaweeds. Mrs. Mary D. Swartz Rose, Teachers  
College, Columbia University.

(8) The Erepin of the Cabbage. Miss Alice F. Blood, Simmons College.

(9) Recent Literature on Metabolism in Typhoid. Miss Josephine T. Berry.

(10) Losses in Cooking Green Vegetables. Miss Josephine T. Berry.

(READ BY TITLE ONLY.)

(11) The Cooking Properties of Potatoes as Influenced by Varieties and  
Methods of Storage. Miss Fern Boll, University of Wisconsin.

(12) The Use and Preservation of Cranberries, Fresh and Stored. Miss Grace  
Howe, University of Wisconsin.



- (13) The Effect of Pasteurization of Milk on the Cooking Properties of Cheese Made from It. Miss Lottie Wilkinson, University of Wisconsin.
- (14) Dietaries Furnished in Tuberculosis Sanitariums. Miss Roxie Yorgey, University of Wisconsin.
- (15) Inversion of Sugar in Various Household Processes. Miss Mary Edmonds, University of Ohio.
- 2. Review of Progress in Nutrition. Dr. C. F. Langworthy, U. S. Department of Agriculture, Washington, D. C.
- 8:00 p.m. *Wednesday Club Auditorium*. Public meeting with addresses. Members of Women's Clubs especially invited. Speakers: Mrs. Philip N. Moore, President General Federation of Women's Club; Mrs. Ellen H. Richards, President American Home Economics Association, and others. An informal reception followed the meeting.

## WEDNESDAY, DECEMBER 28.

- 9:30 a.m. General Session: Administration Section. Miss Lydia Southard, Teachers College, New York City, chairman. Household Service as a Labor Problem. I. M. Rubinow, U. S. Department of Commerce and Labor. Some Social Economic Aspects of Labor Saving Machinery in the Household: J. Lebovitz, Library of Congress.
- 10:30 a.m. Section Meeting—Management. Economic Values of House Work, John Leeds, Teachers College, New York. Thrift in the Household from the European Standpoint: Mrs. Edith Talbot Jackson (presented in absentia). A Basal Ration, with Extras at Additional Cost,—as employed in the Yale College Dining Hall: Miss Josephine T. Berry, Yale University. The Use of a Residence Hall in Training Students in Management: Miss Martha T. Bell, College of Industrial Arts, Denton, Texas. At an adjourned meeting at 11 a. m. Thursday, the Administration Section considered the report of a Committee on Courses of Study in Administration.
- 10:30 a.m. Section on Instruction in Food Preparation and Dietetics. Miss Edna D. Day, chairman.
- Methods of Teaching Dietetics.  
Mrs. Mary Pierce Van Zile, Kansas Agricultural College. Miss Ruth Wardall, Ohio State University. Miss Louise Stanley, University of Missouri.
- Methods of Teaching Preparation of Food.  
Miss Jennie Snow, University of Chicago. Miss Nellie Nesbitt, University of Missouri. Miss Nina B. Crigler, University of Illinois. Miss May B. Van Arsdale, Teachers College.
- 1:00 p.m. Annual Luncheon, with informal addresses and roll-call.
- 3:30 p.m. Section on Child Welfare. Address by Frances L. Bishop, M.D., St. Louis, chairman of section.
- 1. Report of Committee on Education for the Child-Nurse, Adelaide Nutting, Teachers College, New York, chairman, presented by Mary L. Read, of *The American Baby Magazine*, New York.
- 2. Instruction on Child-Care.
  - (1) In the Elementary School. Papers, in absentia, by Mrs. Mary E. Williams, Supervisor of Domestic Science, New York City Schools, and Miss Mary Wright, Director of Household Economy, Public Schools, Philadelphia.

- (2) In the High School. Miss Ella Henry, Supervisor of Domestic Science, Manual Training High School, Denver.
- (3) In the College. Miss Edna D. Day, University of Kansas.
- 3. Emphasis to be Given on the Care of the Normal Child. Mrs. Henrietta W. Calvin, Purdue University.
- 4. Research.
  - (1) Glycosuria in Infants and its Relations to Infant Feeding. Louise Stanley, University of Missouri.
  - (2) The Significance of Curds in Infant Stools. Amy Louise Daniels, Yale University.
- 8:00 p.m. Aspects of Economics of Importance in Household Science. David Kinley, Professor of Economics, Dean of Graduate School, University of Illinois. Discussion: Frank A. Fetter, Professor of Political Economy and Finance, Cornell University.

## THURSDAY, DECEMBER 29.

- 9:30 a.m. General Session. Housing and Sanitation. Miss Isabel Bevier, University of Illinois, Urbana, chairman.
  - 1. Housing Reform. Lawrence Veiller, Secretary, National Housing Association.
  - 2. The Moderate Priced House, Professor R. M. Mann, Head of Department of Architecture, University of Illinois. (Illustrated.)
- 11:00 a.m. Section Meeting. Housing and Sanitation.
  - 1. Some Results of Investigation as to Household Equipment. Helen Louise Johnson, Good Housekeeping Magazine, Springfield, Mass.
  - 2. Courses of Instruction on Housing and Sanitation.
- 11:00 a.m. Administration Section. Report of Committee on Courses of Study in Administration.
- 1:30 p.m. Annual meeting of the Association. Reports of officers to the Association. Reports from Committees. Recommendations from the Council. Report of Election Committee and Election of Officers.
- 4:00 p.m. Methods of Extension Work. Miss Rosa Bouton, University of Nebraska, chairman.
  - 1. Methods of Presenting Extension Work. Miss Neale S. Knowles, Ames, Iowa; Miss Ilena Bailey, University of Missouri.
  - 2. Opportunities and Limitations of Household Economics Departments in Rural Extension Work. Mrs. Henrietta W. Calvin, Purdue University.
  - 3. What the Women's Clubs Are Doing. Mrs. Olaf N. Guldin, chairman. Home Economics Committee, Federation of Women's Clubs.
- 8:00 p.m. What Courses in Sociology—Pure or Applied—Should Be Included in a College Department of Household Science? Professor George Elliott Howard, University of Nebraska. Discussion: Professor Charles A. Ellwood, University of Missouri.

## FRIDAY, DECEMBER 30.

- 9:30 a.m. Instruction in Economics in High Schools, Mrs. Norton, University of Chicago, chairman.
  - 1. The Training of High School Girls as Intelligent Consumers. Miss Agnes K. Hanna, University College, Chicago.

2. The Development of Individual Responsibility through a Study of Social Problems. Miss S. P. Breckenridge, University of Chicago.
  3. How the Individual Home Economist May Help General Economic Progress. Professor William Morse Cole, Harvard University.
- 11:00 a.m. Section on Textiles. Miss Abby Marlatt, University of Wisconsin, chairman.
- The Content of the Course of Study in Textiles. Miss Nellie Crooks, Milwaukee-Downer College. Discussion by Miss Charlotte Gibbs, University of Illinois, and Miss Van Hoesen, Chicago University.
- Textile Experimentation. Miss Agnes Houston Craig, College of Industrial Arts, Denton, Texas.
- The Value of a Course in Historic Costume for the Domestic Art Curriculum. Miss Jane Fales, Professor of Textiles and Clothing, Teachers College, New York.
- Textile Testing Laboratory for U. S. Army. Miss Florence Winchell, Teachers College, New York.
- A Study of Bluing. Miss L. Ray Balderston, Teachers College, New York.
- Some Textile Tests, in connection with an Educational Exhibit. Grace Denny, Teachers College, New York.
- 12:30 p.m. Luncheon at Teachers College.
- 1:30 p.m. Instruction in Home Economics. Miss S. P. Breckenridge, University of Chicago, chairman.
1. Knowledge of the Productive System as a Preventive of Waste. Miss Anna R. Van Meter, University of Illinois.
  2. Knowledge of the Industrial System as a Basis for Consumer's Responsibility. Miss Edna D. Day, University of Kansas.
  3. Cost Accounting. Mrs. Ellen H. Richards, Massachusetts Institute of Technology.
- Discussion. Miss Marion Talbot, University of Chicago.
- 4:30 p.m. Reception to Mrs. Ellen H. Richards, the President of the Association, by the Wednesday Club, at the Club Parlors.

## REPORT ON COLLEGE COURSES IN HOME ECONOMICS.<sup>1</sup>

After considerable study of the condition of instruction in Home Economics in the colleges your committee has decided that what is most needed at present is a reasonable standardization of the regular courses in this subject leading to a bachelor's degree, and the planning of college courses which will meet the rapidly growing demand for practical instruction in this subject and which will not sacrifice reasonable standards of collegiate instruction. Entrance requirements which the preparatory schools are now unable to meet should not be insisted on, but at the same time those schools should be encouraged to introduce Home Economics courses.

Recognizing that the determination of courses of instruction in Home Economics should lie primarily with the teachers and experts in this subject, your committee asked the American Home Economics Association to appoint a committee for conference with us. This was done at the meeting of that Association in Boston in January, 1910. Their committee includes the following: Prof. M. E. Jaffa, of the University of California; Dr. Edna D. Day, of the University of Kansas; Mrs. Mary P. Van Zile, of the Kansas State Agricultural College; Miss Ellen A. Huntington, of the Utah Agricultural College; and Miss Isabel Bevier, of the University of Illinois.

The chairman of your committee had a personal conference with members of their committee in Chicago last June, and in this way and by correspondence the following report has been prepared as representing the views of both committees.

The college courses of study especially arranged for women will naturally include branches outside of what may strictly be defined as Home Economics. Students taking Home Economics courses leading to a bachelor's degree should be required to take other groups

<sup>1</sup> This report was presented to the Association of American Agricultural Colleges and Experiment Stations, by its standing committee on instruction in agriculture, at Washington, D. C., Nov. 17, 1910. The personnel of this committee is as follows: A. C. True, chairman, T. F. Hunt, H. C. White, H. J. Waters, W. E. Stone, and J. F. Duggar.



of subjects having more or less direct relation to the life of men, women and children in the home and in the community. Such, for example, are courses in personal physiology, hygiene and medicine, principles of education, sociology, library science, and others which in some colleges for convenience have been associated with the Home Economics department. It is desirable that Home Economics should be made a well-defined subject of reasonably limited range. For this reason our report begins with a definition of Home Economics.

Home Economics, as a distinctive subject of instruction, includes the economic, sanitary and esthetic aspects of food, clothing and shelter as connected with their selection, preparation and use by the family in the home or by other groups of people.

Instruction in this subject should be based on scientific principles and graded according to the maturity, attainments and purposes of the student.

As in the case of other subjects, courses of instruction in Home Economics should be divided into general classes suited to the respective requirements of elementary and secondary schools, normal schools, colleges and universities.

In colleges and universities the work in Home Economics will naturally be pursued in three main divisions—research, interior instruction, and exterior instruction or extension work. The interior instruction may be given to undergraduates and graduates. With the development of collegiate instruction in Home Economics a variety of special courses will be offered in the larger institutions, and the students will thus be given opportunity to specialize according to their particular aims, as, for example, if they intend to become housewives, teachers, nurses, physicians, managers of hotels or public institutions, etc.

At present it is desirable to set up and maintain a reasonable standard for undergraduate college courses in Home Economics, leading to the bachelor's degree. This paper will be confined to the consideration of such courses.

Standard undergraduate college courses in Home Economics should be arranged with reference to students who have had the equivalent of general education covering the grades in the elementary schools and four years in the secondary school. If possible, students intending to take courses in Home Economics in college should study this subject at least two years in the secondary schools and receive credit for this on entrance to college.

It is, however, recognized that under existing conditions many of the students desiring to pursue Home Economics courses in our colleges cannot receive instruction in this subject in the preparatory schools available to them. It is, therefore, recommended that college courses in Home Economics be arranged to meet the needs of such students, without requiring them to prolong the time needed to satisfy the college requirements for the bachelor's degree.

All courses in Home Economics should be developed with an orderly and carefully graded sequence of subjects and topics. They should also take into account that the study of the theory of the subject, including especially the scientific principles involved in it, is intended to give a rational basis for an efficient practice and that the student has not mastered the subject until she is able to practice the art as well as expound its theory.

The general scheme of instruction should involve (1) the presentation of the subject in concrete form, with accompanying practice, (2) the development of the principles involved, with laboratory practice, and (3) the application of these principles in a rational system of practice more advanced in type, with opportunities for devising new methods of practice and for experimental work.

The standard undergraduate college course in Home Economics leading to a bachelor's degree should include the following subjects:

*Required Subjects.*

1. Home architecture and sanitation.
2. Home decoration.
3. Textiles.
4. Selection and preparation of food.
5. Economic uses of food.
6. Household management.

*Subjects from which choice must be made.*

7. Advanced cooking. Dressmaking or millinery. Art needlework. (At least one of this group.)
  8. Dietetics. Food and nutrition. Art in the home. (At least one of this group).
- Such other electives in Home Economics as the college can offer.

The order of presentation suggested above is not essential, but the subjects should be taught in some definitely related order.

For students who have not had instruction in Home Economics in preparatory schools the following minor college course is suggested to be required of candidates for a bachelor's degree:

- |                                      |                                       |
|--------------------------------------|---------------------------------------|
| 1. Plain sewing and garment making.  | 5. Textiles.                          |
| 2. Cooking.                          | 6. Selection and preparation of food. |
| 3. Home architecture and sanitation. | 7. Economic uses of food.             |
| 4. Home decoration.                  | 8. Household management.              |

College students taking either of these courses in Home Economics should be required to add to them such groups of studies in mathematics, languages, science, economics, sociology, principles of education, etc., as will make their whole college course a well rounded scheme of liberal education, comparable with the degree courses in other lines, and at the same time contribute to the thoroughness of their work in Home Economics. Students taking the minor course in Home Economics might be allowed to elect additional work in Home Economics during the latter part of their college course.

Short courses and extension courses, not leading to a degree, should be arranged for separately and are not taken into account here.

## A UNIVERSITY STANDARD IN HOME SCIENCE.<sup>1</sup>

In connection with the Women's Congress, which was held in the Congress Hall of the Japan-British Exhibition at Shepherd's Bush, England, a discussion was held June 8, on the subject of A University Standard in Home Science.

Lady Rücker, who presided, explained the purpose of the congress. At the British Association meeting at York, Professor Smithells had suggested that women were managing their own education so badly that they should leave it to men to say what women's education ought to be. Professor Smithells' humorous suggestion was perhaps one of the first public expressions of a conviction that had been steadily growing in many minds and this meeting showed that women were ready to take up his challenge to prove that they were only too anxious to advance along the path of educational progress. The scientific discoveries of the Victorian era had necessarily brought great changes into the school and university education of boys and men, but women's energies had, until recently, been so absorbed in getting the doors of the universities opened to them that they had perforce been obliged to follow the beaten track of the curriculum.

Having proved their capacity to become as highly educated as men, women were now able to raise a further claim, the claim that the time had come when the universities should recognize that training for one more profession should be admitted within their walls—the profession of household administration. The need for efficiency in technical affairs had forced the educational authorities to give degrees for the professions of law, medicine, engineering, veterinary surgery, and agriculture. Was it therefore too much to hope that the university would go a step further and recognize that inefficiency in women was as great a danger to the State as quackery in medicine? Would not our descendants look back with astonishment to the dark ages when girls undertook to be wives, mothers, or housekeepers with no technical training, and in consequence wasted their substance, their health, and alas too often their own and their children's lives in the sad costly school of experience through mistakes?

<sup>1</sup>From *Education*, July 2, 1910.



It was efficiency that we required in our women as in our men. The country was doing much to educate the poorer classes. The country councils were making splendid efforts and polytechnics were providing admirable classes. But to get the best teaching we must have teachers with a university diploma and the subjects of Home Science and Economics required research students for many problems. It is impossible to reach the ideal that every woman should have a training to equip her for home life before she is considered fit to leave school until the universities make it possible for the girls' schools to give this teaching by providing the teachers and by giving the encouragement of their examinations. This in brief was the history of the rise of the movement to secure a university standard in home science.

The work has already taken definite shape and for the last two years King's College for Women has thrown open its doors and lent its aid to carrying out the plan of giving education of a university standard with a college diploma to students in Home Science Economics. The experimental years had been most encouraging. Not only had an excellent class of students presented themselves for the three-year undergraduate course of training, but a number of women who had already taken high degrees had entered for the one-year postgraduate course also given in the college, and some were entering upon interesting problems in research. Posts had been forthcoming at once for the students who had taken the college diplomas and it was hoped that the conference that day might lead to a wider recognition of the need of their training and of its admission to the curriculum of our universities.

Mrs. St. Loe Strachery, who gave the opening paper on *The Ideals of Home Science*, prefaced her remarks by a message to the congress from Theodore Roosevelt, to whom, knowing that the subject was one in which he was interested, she had described their aims and objects and had outlined roughly the scheme of the courses at King's College. Mr. Roosevelt gave his warmest approval and sympathy to the movement, and added that he was of the opinion that it was an urgent necessity that a university standard should be established in its teaching.

Mrs. Strachery defined a "university standard" as meaning the attainment in a student of such a standard of knowledge as would be rewarded by the grant of a degree if it had been attained in a subject in which our universities examined for a degree. In the special courses

in home science which were being held at King's College for Women the teaching might claim to attain to a university standard. The students were not allowed to be content with merely acquiring a knowledge of the technical processes carried on in the practice of domestic science, but were required to study at first hand the various scientific principles which underlie the proper conduct of a house or institution and the bringing up of the young. Quoting one or two examples from the syllabus, the speaker pointed out that the study of physics and sanitary science would be of use in the care of the fabric of a house. Applied chemistry had many lessons to teach which would be useful in those thousands of most unscientific laboratories, the kitchens of Great Britain, in preventing waste and improving the physical condition of the people. It was true that women in our universities had for many years past studied physics, chemistry, biology, bacteriology, and, indeed, the whole list of sciences mentioned in the syllabus, but the point on which she wished to lay stress was that these subjects should be studied in a definite coördinated course, having for its object "to provide a scientific education in the principles which underlie the whole organization of home life."

In conclusion, Mrs. Strachey drew attention to the immense field of what she called "vicarious motherhood." All women who were in any way concerned with the care and training of the young were vicarious mothers, including that great army, the women teachers in our elementary and secondary schools. Should we not expect that their attention would be progressively directed throughout the whole course of their training to the scientific principles which underlie the physical, mental, and moral development of their future charges? Yet this could not be done unless the teaching of home science were carried to a university standard.

The Duchess of Hamilton said that, even when no practical work had been done technical knowledge made mistresses able to sympathize with and understand their employees, have better control over them, and, in consequence, have all work better done than if the day was gotten through in a merely slipshod manner. On the other hand it induced a more practical interest on the part of employees, and more efficient service. Upon the girls of the upper classes rested the responsibility of the future home life of Great Britain, and to a great extent the progress of the empire. Queen Mary was cited as an ideal example of one who had studied deeply and took a lively interest in all branches of knowledge, not forgetting to give the science of home life its proper place.

Miss Oakely, warden of the Women's Department of King's College, speaking on Home Science and Higher Culture, said the new movement met the spirit of the age in its insistence that science should be everywhere, that reason should occupy all spheres, and that there should be no dark corners left; yet in meeting it they brought something of their own, something that women had learned in the long history of their demand that their highest faculties should be used in the highest ways. Home science, however great its interest as a science, must be a thing of the spirit, a thing pursued not merely as a means of health, safety, and comfort, but also as a measure of regeneration.

Miss Faithful, principal of Cheltenham Ladies' College, who spoke on Home Science for Senior Girls pointed out that the movement was not confined to England, but was widespread in America and Germany. The schools of England were in favor of the movement, and the conversion of the headmistresses had been one of its most striking features. She held the view that senior girls should be definitely taught some science. There was a danger that girls from the ages of 15 to 18 would develop the romantic faculties to the exclusion of all else, and the subject of home science offered a very great counterpoise.

Mr. Y. Tadokoro, who is attached to the Ministry of Public Instruction in Tokio, spoke on the advance of female education in Japan. As there were fewer women than men, the proportion being 97 women to every 100 men, nearly all women married, and all the schools aimed at teaching the girls to be good wives and mothers.

Mrs. Sidgwick, principal of Newnham College, was the last speaker. She said she approved of the home science courses but thought the title misleading and mischievous, preferring home arts and domestic arts to home science.

## WHAT COURSES IN SOCIOLOGY, PURE OR APPLIED, SHOULD BE INCLUDED IN COLLEGE DEPARTMENTS OF HOUSEHOLD SCIENCE?<sup>1</sup>

GEORGE ELLIOTT HOWARD, Ph.D.

*Head Professor of Political Science and Sociology, University of Nebraska.*

It is highly significant that the question to-day put to me should now be deemed expedient by this Association. It means that already, after an astonishingly short probation, the youngest of the new disciplines is before the college council seeking the just terms, the right basis, of admission to full academic privilege. It implies in that our country the hour has come seriously to consider the organization and standardization of superior instruction in the field of household science.

*Household Science as a Liberal Education.*—Naturally the vital problem of proper specialization is the first to arise. If a college department of household science is to provide a liberal education, equivalent to that afforded by the older disciplines, how shall its program of studies be composed? With the distinctive technical studies in household science as a "major"—to use current professional phrase—what other subjects as "minors" should be combined so as to secure a culture at once deep enough and broad enough for social efficiency? Now, it ought not to be so hard as it was a few years ago to reach an agreement on such a program. Happily we are perceiving more clearly than formerly the real harm of too narrow specialization, of too short scientific vision. In academic study, we are learning to distrust a specialization so minute, so confined, as often to produce mental sterility. We are coming to realize that there is such a thing as *breadth for the sake of depth*. This is decidedly true in the wide domain of the social sciences. The sociologist must know a good deal of economics, of history, of psychology, in order to be a sound sociologist; the economist must have a broad knowledge of sociology and of history, if he would get a firm grip on economics; while history

<sup>1</sup>A paper read at the St. Louis Meeting of the American Home Economics Association, December 29, 1910.



is too apt to prove a barren waste of mere events unless it be illumined and vitalized through economic interpretation and the constant recognition of social causation. Doubtless the perennial discussion of the interrelations of sociology and the other social sciences is not without real value. The endeavor to find boundaries is inevitable while a young and ambitious body of learning is in the "analytic" stage and striving to become "synthetic"—to get recognition as a legitimate member of the scientific family.

*How Much May the Social Sciences Overlap?*—Still, is there not danger of exaggerating the importance of running exact boundary lines? In actual research the main thing is to reach the truth, whatever fence has to be crossed. As a practical rule of specialization, I venture the suggestion that no fixed limits need be set as to the degree in which the overlapping of the departmental areas of the respective social sciences is permissible. Perhaps such overlapping should be in direct ratio to the intensiveness of the particular study or investigation. Probably, as a working guide it may be affirmed that the *results*—the laws, truths, generalizations—obtained in each science are available in all, while the *processes* are not; though even in the latter respect a fixed limit would often prove a hindrance to the free handling of materials. The sociologist, for instance, will normally give due faith and credit to the historian's conclusions; but in a given case, if the historian has neglected the intensive work which the sociologist needs, or has not done it well, the sociologist perforce must turn historian and perform the task for himself as best he can. By the same token, as some of you have found out, the sociologist, by neglecting intensive work, may shift his own proper task to the shoulders of the household scientist.

That sociology should fill a large space in the curricula of college departments of household science might be taken for granted, were it not for the facts disclosed by their published announcements. These reveal a surprising progress in the differentiation of the technical or professional studies peculiar to that science. Even in the smaller or younger institutions the student finds in the courses dealing with foods, shelter, clothing, personal hygiene, household administration and the like a rich feast spread before him. The progress already made on this side of the science deserves the highest praise. On the other side, the side of the supplementary studies needed to place these departments on a proper college basis, the showing is not so encouraging. Here and there courses in sociology are prescribed or made

elective; but generally in the list of subjects required for a degree the conventional technical studies are supplemented by almost anything, from Greek to religious knowledge, without reference to sociology. Yet, I dare affirm, if college graduates in household science are to become efficient, even safe, leaders in the art of right living and home-building, they must gain the catholicity of sympathy, the enlightened toleration, the breadth of moral vision, the penetrating insight into the social-psychic forces and processes which in each age and environment have moulded the type of the household; and these qualities can come only from an intimate acquaintance with sociology.

*What is Sociology?*—But that depends: What *is* sociology? Verily, that is the question which reaches the vitals of this hour's discussion. May I put before you my confession of faith? I have a profound distrust for that dry-as-dust sociology which spends its energy in fine-spun theorizing or in defending the legitimacy of its scientific birthright. Definition, theory, scientific construction lines have indeed each a rightful place in sociological thought, and they need not be entirely excluded from the seminar or even from the undergraduate classroom. Yet, has not the teacher who looks upon education as an equipment for social service a nobler, a more urgent duty to perform? Instead of trembling and vacillating lest he encroach on some other person's preserves, he will strive earnestly and bravely to put his science at the service of men.

*Sociology as Social Service.*—Sociology should be an explanation of human experience in social living. It should touch actual social life at every salient point. Often the day's lesson may best be vivified and realized from current events. The alert teacher is never in want of materials for his laboratory. The morning journal may give him just the examples which he needs to kindle the fruitful imagination and clarify the understanding of his pupils. Conceived of in this way, sociology becomes the most practical of studies. Moreover, the intemperate assaults of conservative pedantry and the anti-social interests suggest that sociology is "making good." The sociologist is fast becoming the accepted modern apostle of social righteousness, preaching and practicing the new gospel of saving humanism. There is no evading the plain fact that the great constructive work of moral progress is being done by the expert students of the realities of modern social life; by the trained and fearless minds which make our colleges and universities radiant centers of helpful and honest thought.

Now, sociology and household science are blood-kindred. But

for the risk of stirring the jealousy of the economists, I should be tempted to say that they stand in the relation of parent and child. For, at bottom, would it be a very extravagant conceit to say that household science is a division of applied sociology? At any rate, are they not in a position to render each other an important reciprocal service? If sociology at its best, such as I have hinted at, has something precious for household science, household science in turn, by demanding expert assistance, may stimulate sociology to play a larger and more efficient rôle in education.

*A Holy Triad of Personalities.*—Because of this close kinship, it becomes almost invidious to suggest courses in sociology for the special privilege of being accredited toward a liberal education in household science. It is hard to say which should be excluded. This is not surprising when one considers the history of the household. In some form, the household has always been the unit of social progress. Reflect on the vast spiritual or cultural content of the word! It connotes the trinity of institutions—three in one and yet one in three: marriage, family, and the home. It means the hearth where dwells the holy triad of personalities: father, mother, and child. What an endless stream of the social-psychic products that constitute human achievement has welled up and flowed out from the forces which dominate the household! What a host of the symbols, customs, modes, inventions, superstitions, beliefs, imperatives and ideals that rule the lives of men have been molded in the same social crucible! It will be a serious mistake, in planning a college education fit for the training of efficient leaders, if the more material factors of home-building—the economic, hygienic, or administrative factors, for instance—be isolated from the whole institutional or psychic life of the household. In a word, household science without sociology would be a body without a soul. In this ideal I feel sure of your sympathy; for is not your best literature illuminated by it? Are not those grand little books of your President (Mrs. Ellen H. Richards), for instance, from cover to cover inspired with the living spirit of dynamic sociology?

For convenience of analysis, in considering the aspects of sociology of most value for household science, courses in four general divisions of the field are suggested: pure or general sociology, social psychology, applied and historical sociology, and social anthropology. Throughout the list, the use of the comparative method is taken for granted; while it is not overlooked that the courses outlined may only be adopted in whole or in part, treated intensively or summarily, accord-



ing to the exigencies of each particular college. This evening, I take it, our purpose is to focus attention upon a definite program of sociological studies, so as to aid in eventually standardizing superior training in the related field. Now, the range of social phenomena is so vast that by judicious selection it seems possible to plan studies which, without sacrifice of scientific quality, may prove of unique value for our purpose. Accordingly, in some cases, the formal statement of a course is followed by a hint as to what accent of principle, what trend of discussion, or what choice of illustrative materials will render the subject most fruitful for household science.

#### SUGGESTED COURSES IN SOCIOLOGY.

COURSE I. *General Sociology: A Study of the Principles of Sociological Science.*—After a brief examination of the characteristics of sociology, including definition, subject-matter, and relation to other social sciences, this course investigates in turn the social population, the social forces, the social processes, and those social products or structures most important for understanding the household.

Such a course is of basic scientific value; and it will become intensely practical if vitalized through the expert choice of materials. Take, for instance, "social process," which Professor Ross well calls the "primordial fact," lying back of all social structures. It presents, as he suggests, a myriad aspects or varieties, corresponding to the countless interlacing "actions and interactions of men." Here is an opportunity to study social genesis, social causation. A form of marriage, a family type, a species of human dwelling, a domestic custom or implement, a household belief or superstition, each is a precipitate, a residuum, a product of social process, of "the quick cause before which," Emerson says, "all forms flee as the driven snows, itself secret, its works driven before it in floods and multitudes."

Back of the social processes lie the social forces—the wants or desires of men. Here is the motive-power, the electricity, the "dynamic agent," to use Professor Ward's term, which starts the social machinery and keeps social progress to its work. Consider the vast number and variety of the appetites, inclinations, ambitions, emotions, beliefs, and ideals which make up the surging mass of human wants or desires, the springs of individual and social action! Indeed, one hardly sees how sound or efficient training in the economics of the household can be attained without requiring a thorough study of the



desires as social forces. Desires fix the values which we give to things. In these latter days, the economists have done well to include in their treatises a discussion of the "consumption of goods." Yet the sociologist is especially equipped to throw a clear light on this subject. The philosophy of the desires carries us into the most secret councils of the domestic budget; it opens the hidden ledger of the family expenses and discloses the real motives determining the standard of living. For men consume, not according to their needs, but according to their wants; and their wants are of every sort: wise or foolish, frivolous or serious, pure or vile, base or lofty, selfish or altruistic, holy or unholy, in every possible combination. It will be a hard but worthy achievement if the teacher of household science shall be able to do somewhat to socialize human wants.

Back of social structure, social process, and social force, at the threshold of this course, is the social population. Experience has shown that the sociology of vital statistics is wonderfully fascinating to the student. In scarcely any other way can he gain so vivid a conception of the actualities of modern social life, or get so firm a grasp on the meaning of the new social service activities. The statistics of the urban density and growth of population, for instance, lead him directly to the housing problem, with the related problems of the slum, the sweat-shop, the factory, and child labor. The figures relating to marriage and divorce land him in the very heart of a many-sided social-ethical discussion whose interest centers in the family. Even more enlightening is the tragedy of the death-rate. The student is appalled when he first comprehends the wanton sacrifice of human life, the reckless waste of our vital resources, through ignorance, disease, and bad social condition. He shudders at the frightful mortality of the slum and the insanitary tenement whose dark and bloody actions are perennial in our great cities. Gradually he realizes that slaughter in war is not so deadly as institutional murder in times of peace; and so he comes to understand, contrary to the popular view, that the real race-suicide now threatening society consists chiefly, not in a falling birth rate, be the cause what it may, whether higher or lower ideals, but a death rate needlessly high. Then he turns to the triumphs of scientific prevention, and takes new courage. To his amazement he learns that there is actually being achieved a conquest of death; that in the occidental world since the coronation of English Elizabeth the average length of life has been more than doubled. Smallpox and yellow fever have been nearly routed; tuber-

culosis is on the run; and even the campaign to prevent insanity is already begun. A single flash of knowledge enables him vividly to see how much the life of man lies in his own hand. For recently Prof. Irving Fisher has calculated that proper care for pure water, pure milk, and pure air—the blessed trinity of health—would increase the average span of life in the United States by eight years.

COURSE II. *Social Psychology: An Investigation of the Chief Psychic Factors in Social Evolution.*—This course accents the varied aspects of suggestion—imitation and crowd psychology. It studies the laws of craze and sect, fashion and conventionality, custom and tradition, discussion and public opinion; and it considers the rôle of suggestion in household education.

Among teachers of experience the conviction is deepening that social psychology is by far the most practical, the most fruitful, division of sociological science. With wise selection, almost every lesson may touch the psychic life of the family. The unregenerate family is *par excellence* the stronghold of mob-mind. Where else is the tyranny of fashion, fad, and conventionality so severe? Where else do custom and tradition hold more rigid sway? Where, in the Tardean sense, is there so much slavish imitation and so little invention as in household habit, economy, or administration? Where is the influence of suggestion so constant or so potent as in moulding the child's personality? Where else is undisciplined suggestion more harmful? On the other hand, when rightly disciplined or controlled, is it not likely that mental suggestion has a great and beneficent rôle to play in the future home education of the young? On this point, Dr. Sidis has recently made us all "sit up and take notice." Moreover, for the organization of such a course, there is already a large and growing monographic and serial literature. In particular, the books of Baldwin, Sidis, McDougall, Davis, Cooley, Ward, and Ross, with the vast storehouse of illustration provided by Tarde, have made comparatively easy the analysis of materials for academic study.

The two courses already suggested are fundamental. We may now invade the wide domain of historical and applied sociology.

COURSE III. *History of the Family and Related Institutions.*—1. Early history: Theories as to the genesis of marriage forms and family types; mother-right and father-right; polyandry, polygamy, and monogamy; wife-capture and wife-purchase; economic and religious influences on the rise of family institutions; types of clan and family dwellings. 2. Mediaeval history: Marriage and the family

under Teutonic customs and canon law; influence of the Reformation. 3. Modern history: Decline of paternal authority; individualization for the sake of socialization; growth of various forms of social control of the domestic relations; problems of marriage, divorce, and sex-education, the home and the industrial revolution.

Such a course, properly treated, is suitable for either graduates or undergraduates. Its literature is enormous and very hard to read. It may be supplemented by the following intensive study, for the construction of which I am especially indebted to the expert skill of my colleague, Dr. Lucile Eaves. It is so rich in the culture elements essential for our purpose that it alone might almost furnish a liberal education in the principles of social service. Possibly a very detailed analysis may prove helpful in planning the new college program in household service.

COURSE IV. *The Interrelations of the Home and Modern Social Betterment Movements.*—1. The fundamental importance of family life in all forms of social betterment. 2. The founding of the home: Significance of studies in eugenics and in sex-hygiene; social value of the legal regulations controlling marriage. 3. The selection of the dwelling: Tests of suitable sanitation; choice of social environment; agencies for assisting in the purchase of a home. 4. Social significance of the period of infancy: Individual and social gains due to the prolongation of infancy; infant mortality, its causes and prevention. 5. The social psychology of the home: Social lessons to be emphasized at different periods in the development of the child; systematic training in a sense of social responsibility; psychological value of the ceremonies of family life; systematic education in the psychology of sex. 6. The social hygiene of the home: Utilization of public health service; avoidance of infection; responsibilities in the protection of the community health. 7. Economic aspects of home life: Training for participation in the economic activities of family life; systematic teaching of thrift; responsibility of the home for the maintenance of improvement in the standard of living; social significance of typical family budgets. 8. Coöperation between the home and other institutions of the community: The home and the school; home and the church; home and voluntary social service clubs and leagues. 9. The breakdown of the home and the call for social control: Substitution of the juvenile court and the parental school; methods of dealing with dependent families; care of the homeless child; compulsory medical and sanitary inspection. 10. Recreational life of the home: New views about the sig-



nificance of recreation; ways of organizing and promoting the social life of the family; dangerous forms of recreation; the peril of child labor. 11. Utilization within the home of the cultural opportunities of the community: Use of municipal and state libraries; means of promoting art education; available information in government publications; ways of using parks, museums, etc. 12. Social and civic activities of the family: Ways in which children may be trained for social and civic duties; forms of social and civic work that could be carried out by the family group.

Such a course carries systematic education far into a neglected but fertile field. How many of the most fruitful activities of modern social life are ignored by the schools! Household science itself has come in response to the rising demand for the socialization of education. To aid in organizing and appreciating this movement, the next course is suggested. In substance, Professor Eaves is now giving it with excellent results in the University of Nebraska.

COURSE V. *The Social Training of Children*.—1. The demand of leading educators for more definite social training. 2. The development of the child in its relation to moral and social education. 3. What the school may do to explain and strengthen the social and economic life of the home. 4. Significance of the play of children. 5. Supervision of the social life of adolescents. 6. Critical examination of modern experiments in the moral instruction and training of children, including a study of (a) Dr. Dewey's former experimental school at the University of Chicago; (b) the school of the New York Society for Ethical Culture; (c) the work of the English Moral Instruction League; and (d) French courses of study and texts used in moral education. 7. Discussion of proposed plans and methods for promoting vocational training in the public schools.

Even so novel a course as this is not sufficiently intensive to meet all the demands of modern society upon the teacher for aid. There is an urgent call for systematic home and school education in sex-problems. Here and there, as under Professor Jessie Phelps at the Michigan State Normal College, excellent work in a most practical and sensible way is being done; but such instruction should become a matter of course through the land. Is it not meet that college departments of household science and sociology should join hands in the training of leaders for this much needed service? Perhaps such a program as the following is feasible:



COURSE VI. *Sex-Education*.—1. The elementary biology and physiology of sex. 2. The customs, beliefs, symbols, and folklore of early societies regarding the sexual life and reproduction. 3. Instruction needed as a preparation for marriage and the functions and responsibilities of motherhood and fatherhood: Biological and social significance of courtship; "romantic love," its value and its danger; origin and social menace of the double standard of sex-morality. 4. Negative eugenics: Sterilization of criminals; legal restraints on the marriage of the unfit. 5. Social diseases: The organized movement to check the great "black plague"; social causes and proposed remedies of prostitution; the "white slave" traffic. 6. Positive eugenics: Heredity and selection for the improvement of the human breed. 7. The Odin-Ward doctrine of potential genius.

The youngest and one of the most helpful branches of sociology is social anthropology. It deals with the social or cultural elements of anthropology as distinguished from the merely physical. The subject is packed with information relating to the early life of man in the household and the tribe. Here are two courses which in the hands of Prof. Hutton Webster of the University of Nebraska have proved decidedly successful:

COURSE VII. *Primitive Culture: A Study of the Early Life of Mankind as Revealed in Monuments and Implements, Customs, Institutions, and Beliefs*.—1. The origin and development of language; the beginnings of writing and alphabets. 2. Discovery and use of fire; primitive industrial methods; food and clothing; the domestication of plants and animals; early methods of transportation. 3. Beginning of scientific knowledge; of the fine arts; of music and poetry. 4. Marriage and family life amongst the lower races. 5. Beginnings of government. 6. Evolution of private property and money; of slavery and serfdom; of crime and primitive justice; early religious ideas, rites and mythology.

Excellent texts for such a study are E. B. Taylor, *Anthropology* (New York, 1881), and W. I. Thomas, *Source Book for Social Origins* (Chicago, 1909).

COURSE VIII. *Folklore: A Study of Those Features of Primitive Culture Which Still Remain Among Civilized Peoples*.—1. Folk-faith: Survivals of savage belief in spirits, in magic, and in myths and legends. 2. Folk-literature: Fairy tales, ballads, nursery rhymes, proverbs, riddles, and fables. 3. Folk-customs: Popular festivals, ceremonies, games and sports, symbols, and minor superstitions.

Valuable aids for this study are A. C. Haddan, *The Study of Man* (New York, 1898), and M. R. Cox, *An Introduction to Folk-Lore* (2d ed., London, 1904).

#### SHALL THE FAMILY GROUP BE RE-SOCIALIZED?

These eight courses, it is hoped, may serve at least as a "trial" answer to the question set for this hour's discussion. The subject is by no means exhausted; yet, under present conditions, it is probable that few departments may be able to adopt even the suggested program. There is room for election and for substitution. In this paper, an effort has been made to reveal the meaning for social progress of a close fraternal alliance between sociology and household science. For the hardest and noblest task now demanded of the teacher is to create a rational system of education, broad enough and deep enough to embrace every aspect of the family-life in its relations to the larger social life. There must be provided a many-sided training for marriage and parenthood as well as for the economic, artistic, and administrative factors of home-building. The home must be rescued from the din and throng of the market-place; it must regain something of the group-privacy which it had before the industrial revolution; but it must not do so at the expense of mental isolation. The home will not have less sanctity when through it flows the swift current of the larger social life. In our days, the family group as such is no longer recognized in law—by the state. Its ancient corporate bond has been dissolved. Yet it still has spiritual ties which may be strengthened through education. Is it too wild a fancy to dream that sometime the family group may again become socialized? When through the efficient training of its members in household science and in the sociology of the domestic relations the family has "found itself" as a psychic fact, when it has become thoroughly aware of its proper functions in the social order, may it not safely and profitably be awarded by the state a large and concrete share in the world's administrative work?

## COURSES IN SOCIOLOGY.

CHARLES A. ELLWOOD, Ph.D.

*Professor of Sociology, University of Missouri.*

I need not say that I am in very hearty accord with all that Professor Howard has said in his excellent paper. What I shall say is supplementary, in the way of approaching the subject from a slightly different standpoint.

Whether sociology has any vital relation to household science or not depends, of course, upon the point of view. If household science deals merely with questions of food, shelter, and clothing, then, of course, these questions can be studied quite independently of the home or the family as an institution, for we should still need food, shelter, and clothing even though the institution of the family and the private home were abolished, as we understand them. It is only when we assume the family and the private home as necessary social institutions that Home Economics becomes a genuinely social science. That this is assumed by you is indicated by the name of your Association. I like the name "Home Economics" for that reason, although I feel that household science, as Professor Howard has indicated, would be an even more exact designation for your science, because the word economics in modern times has come to be limited to the material things of life, whereas I believe that household science should consider not less the spiritual things in the household.

If the home or the private household is assumed as a necessary social institution, and is the real subject matter of your science, then household science becomes an applied social science, and its relation to sociology is that of the relation of any applied science to the pure science upon which it is based. Now, sociology is a pure science and for the purpose of our discussion, I think may be adequately defined as the biology and psychology of the social life. At any rate in its theoretical aspects this is exactly what sociology is, the biology and psychology of human association.

The family is one of the fundamental forms of human association, and it is upon the family as an institution that our whole social life

rests. The home or the household may be defined as the more or less material embodiment of this most intimate form of human association which we know as the family, the association of husband and wife, and parents and children. It must be evident, therefore, that household science must take into account, or rather must be based upon, the knowledge of the biological and psychological factors at work in the institution of the family. The biological factors in the home, or in the family life, have certainly not been neglected by your science, and especially not on the side of nutrition, sanitation, and the like. The real vital elements, however, in the family are the relations of individuals to one another, and these relations are mainly psychological or spiritual, as we say. It is not sufficient that the nutrition and health of all members of the family be looked after, it is even more important that all the relations of the family to one another be of such a character as to constitute what we call a *good* home. The real object of your science can surely be nothing less than to secure the up-building of *good* homes, homes which shall produce the highest type of manhood and womanhood. Therefore, the spiritual aspects or functions of the family and the home must be taken account of by the student of household science.

Household science can hardly be studied intelligently without understanding the meaning, the function, and the purpose of the family and the home life in the total life of humanity. This means that we must consider the family and the home as social institutions related to every other social institution and having a vast purpose in the total human life. This function is really the greatest of all social functions, for it is the function of producing the new individuals in society, equipping them for life, and sending them forth to do their work in the world. Workers in household science need to see their movement, therefore, as a part of the vast movement which is now going on for social uplift. The movement for instruction in the household sciences is essentially a movement for social betterment; hence the student of household science needs to understand the connection of her work with all the movements in human society for social improvement, such as the movement for better housing, against child labor, and the like. Every housekeeper would indeed find a new meaning and a new dignity in her work if she could realize its bearing upon the total life of humanity. It seems to me that this outlook, this understanding of the deeper meaning of her work which the student of household science, and even every housekeeper needs, can only be gotten from



the study of the origin and development, structure and function of the family as an institution in society, that is, it can only be gotten from sociology.

I fear Professor Howard has frightened some of you by outlining no less than eight courses in sociology which should be taken by the student of household science. I agree with him that all these courses should be taken, and especially by one who does graduate work in household science. I take it, however, that he was giving you a "counsel of perfection" rather than presenting the irreducible minimum of courses in sociology necessary for the ordinary student in household science who takes only four years for a course. I would reduce the required courses to three in number: First a course in general sociology in order that the biological and psychological factors in the social life generally and the place of the family in the collective life may be understood; secondly, a special course on the origin, development and function of the family; and thirdly, a course on modern philanthropic and social movements to show the intimate connection between all improvement of living conditions in the family and improvement in living conditions in the community generally.

In my opinion it would be well if the first two courses, the course in general sociology and in the sociology of the family should be united in a single course—the family being made to illustrate the working of the essential biological and psychological factors in the social life. This is what has been done at the University of Missouri for a number of years with great success. The student gets in one course his general view of society and a considerable degree of special knowledge regarding the origin, development, and modern conditions of the family and the home. For these three courses not more than ten hours would be needed out of a total of the one hundred and twenty required for graduation. I, therefore, conclude that these three courses should be required, and not elective, for all students specializing in household science.

## WHAT COURSES IN SOCIOLOGY, PURE OR APPLIED, SHOULD BE INCLUDED IN SCHOOLS OR COLLEGE DEPARTMENTS OF HOUSEHOLD SCIENCE?<sup>1</sup>

ANNA GARLIN SPENCER.

*University of Wisconsin.*

After a discussion of Home Economics courses for both successful home making and vocational usefulness, Mrs. Spencer spoke as follows:

On the other hand, those technical schools of household science that minister to the needs of more mature students, those who are in training for higher paid and more responsible positions,—professional, commercial, mechanical, philanthropic,—should offer to their students thorough courses in sociology, not only as contributing toward a knowledge of theories of social development, history of institutions, social psychology, social control, and social progress, but also those elements of applied sociology which give a permanent foundation for personal and social ethics and a definite method of human uplift. If such a high-grade technical school is attached to a university, it can easily secure the needed instruction along these lines; if it is an independent school it must provide its own professors in the science of human development and the art of conscious human progress. Psychology, personal and social; physical development, on a well defined biological foundation; the history and meaning of social institutions; social aspects of education as a “process in the spiritual evolution of the race”—these are essential studies. The evolution of the family and its vital place in the socialization of the individual; the racial, political and economic factors in civilizations; the control and abolition of social ills, such as crime, vice, disease, poverty; the outlining of a social ideal in general and in particular as related to one’s own locality; the essential next steps in social progress and how to attain them;—surely these are vital necessities of study for women

<sup>1</sup>A condensation of a paper presented at the St. Louis Meeting of the American Home Economics Association, December 1910.

of "light and leading," whether in vocational positions or at the head of private homes of social influence. It seems also that educational institutions dealing with the mechanics and the economics of the home life might well *lead* in emphasizing these social values of that home life and the society of which it is the center.

It should be added that the ethical content of applied sociology must be clearly and inspiringly presented in courses for women students if those courses are to make their strongest appeal. The genius of womanhood is intensely practical, and the function of motherhood has given an unconquerable tendency toward personalization in social service; and hence, the law of human development must be translated for the average young woman in terms of the *duty* of social service and the *gospel* of social uplift, in order to reach her inmost sources of distinctive power. The fact also that "teaching is woman's organic office," and that other fact—that in all ages she has been socially charged with the care and protection of the child, the aged, the weak, the defective and the incompetent,—should give a strong leaning toward the further translation of applied sociology in terms of enlightened philanthropy and moral reform. The home must be itself socialized as well as help to socialize its inmates. If so, then the women must be socialized, not alone in feeling but in perception of moral values and the true uses of idealism.

What has been said in regard to sociological studies in technical schools of household science applies with equal force to such departments in colleges and universities. No woman can be considered highly educated today who has not some knowledge along these lines to give her breadth of view and poise of character. If men may be safely left to specialize in vocations without that clear sense of interrelationship of parts and law-governed movements in the whole of society which sociological studies are so well fitted to give, woman can not be so left a prey to unbridled specialization. For women, as mothers, are and must be the centre of the social structure and must be fitted adequately to keep social progress steady and evolutionary, instead of leaving it to become erratic and revolutionary; and the best balanced education for women, therefore, is a vital social necessity. The most invaluable of variations from type, even genius itself, must be used at last, as contributions merely to the commonwealth of the commonplace "fabric of the world." Women must aid in this process, not merely by force of biological laws, but by intelligent pur-

positive effort, such as a better knowledge of social law and social tendencies can give.

So far as the normal schools are concerned, all elements of sociology, pure or applied, which have particularly to do with the social aspects of education, are indispensable for the training of teachers. Nor should this sociological approach to education be sharpened too exclusively toward the School as a social institution. The State has taken over from the Family and the Church the control of education, and the School is in closest touch with the home and the ethical ideals of society. The School in the United States is the one unifying influence in our "melting pot" of nations.

The greatest of social needs in our country seems to be a minimum of ethical ideal common to all classes as a basis of agreement in the training of children, and of decision concerning imperative next steps of social reform and progress. Herbart declares our chief need in education to be "character training, based on an irrefragible foundation of morality." Where shall be found that irrefragible foundation of morality, save in the testimony of human experience, deduced by searching and fearless inquiry into the social results of motives and acts as these are interpreted by the trained reason? Only an irrefragible foundation of morality of such a sort can be a united morality, strong enough to control vagrant and unsocial impulse, dominate education, and give method to social action. If it is true that we need this minimum of commonly accepted ethical standard, we must get it from the School chiefly, but it must carry its sanctions over into the home and realize its ideals through the political and economic and social order. If we depend chiefly upon the School to initiate a moral unification as a guide to the common life, and if the School can only do this as it bases its ethics on the experience of the race, we must grow teachers for the public elementary schools capable of the high exercise of mind this inquiry into the verdict of the nature of things demands. How can we do it unless we have not only courses of study in sociology, pure and applied, in the normal schools, but an atmosphere of valiant truthseeking and scientific veracity equal to that any college or university can boast? The normal schools, with or without courses in household science must be enlarged in this manner: but it so happens that manual training and nature study and art work and household science courses have already made inroads into the antiquated curriculum of normal schools, and the group of "pro-



gressives" represented by the teachers of these subjects are opening the way to more scientific and accurate work in sociology. Hence the appropriateness of using such departments for the extension of that social knowledge which teachers of the common people most need.

One word I beg to add respecting the high school and its departments of household science in relation to courses in sociology. The high schools were not included definitely in the question this paper has tried to answer; but no problem in education pleads more eloquently for solution than that of a possible grounding of pupils of the high school in the main principles of social science. Since but a small fraction of young people go to college, and attendance upon day and evening high school is constantly and rapidly increasing, the question is important. And since departments of household science in high schools reach and influence tens of thousands of young girls where the college and technical school reach their hundreds, those who believe in the value of sociological study in connection with such departments must press the question. In the reaction of the School upon the Family, we find a strategic point where the boy and girl, at the time when their individualism and sense of choice are keenest, take from the high school to the home the standards they gain from its teaching. Moreover, while the college woman, if she has profited by her opportunity to gain command of culture-tools, can easily make good deficiencies in her college course as they reveal themselves to her ripened experience, the average girl of well-to-do and fairly well educated parents who ends her formal schooling on the day she graduates from high school has learned so little of so many things that she is likely to fail in knowledge of ways of getting the later instruction she needs. If she is to know anything of sociology, she must get it early: or perhaps *very late* in "tabloid form," at clubs or lecture courses. But how teach Sociology, pure or applied, in the high school? Surely not pure sociology, at all, at least by text books. To see youth struggling under, not with, abstract statements of social laws and conditions, or confused by much descriptive treatment of the remote or strange in human existence, is a sorry sight!

Applied sociology, however, taught by a teacher who is saturated with sound and balanced theory, but vital and appealing in practical use, is distinctly a high school study. It is, however, in my opinion, the ethical content of applied sociology that should form the basis of such study in classes below college. Civics, based on right understanding of group relationship and the social institutions, especially

the Family and the State, which have given us our sense of human solidarity; vocational ethics in choice and standards of work, including such study of economic history and its social inter-relations as may throw light upon personal problems and lead to large views of human industry and of personal achievement; and the *sociological basis for self-culture*, physical, mental, moral, the cosmic reasons for making the most and best of oneself as a part of the social whole—all these and more constitute that ethics which Ward tells us “is a part of applied sociology.” And since youth is vital in its relation to life, questioning all things with its imperious “What have you for *me?*”, it seems clear that youth has a right to gain certain universal standards of choice and of action in the conduct of life, from the right application of sociological theories and facts from the right sort of teacher.

Most that I have written seems to apply to the teaching of sociology, whether or not associated with household science, and may therefore need excuse as too general. It is not forgotten, however, that schools and departments of household science, because they deal with family life, are closest perhaps of all to the rapidly clarifying consciousness of the need for more, and more thorough and effective, instruction in sociology. The reason of this is that the family, of all social institutions, the household, of all our inherited industrial centers, are most profoundly affected by the economic change of modern life. And women are in the storm centre of this profound reorganization of the family and of household labor. They must be, for they are the centre of this centre.

Therefore, if sociology has any guidance for womanhood in an hour of radical change of circumstance, any fresh sanctions for established codes of morals in marriage, any new readings of social responsibility for the home in an hour when the old admonitions fail to command, in the name of social health and social progress, send all the girls and women to school to the new science! And if they take it more eagerly, as seems to be the case, when mixed with special ingredients called household science, by all means make the combination!

## EXTRACTS FROM A DISCUSSION OF THE EDUCATION OF GIRLS IN DOMESTIC SOCIOLOGY AND THE ARTS OF HOME-MAKING.

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*Household Hygiene.*—Whatever compliments may be paid to modern architecture, the fact remains that most homes are deficient in general sanitation. As witnesses to this are tuberculosis and the long catalogue of respiratory diseases and other ills which are essentially house-bred maladies. The modern house breeds disease, and one of the crying defects of modern education is that the keepers and inhabitants of the house have not been taught that much may be done to obviate the dangers, and that they are largely responsible. During the present year we may calculate that about one-fortieth of the population of the United States will be constantly sick. That means that every day there will be 2,000,000 homes harboring sick people; and most of these will be sick with preventable diseases, that is, illnesses which the application of knowledge would have obviated.

There are homes in which children or adults are sick pretty much all of the time through the winter; and there are other homes in which such sickness is unusual. The difference will commonly be found to reside in the observance by the latter of certain principles of hygiene of which the former are ignorant. I am acquainted with young women who according to the standards of their social environment would be regarded as cultured and enlightened, but whose ignorance when they become mothers, I can predict, will cost their children a great price.

It is not necessary that every one in the household shall be wise; the influence of one woman who is familiar with hygiene is often sufficient to create the atmosphere of salubrity. That a mother shall be conversant with the conditions essential to the preservation of health must be obvious. But where shall she learn them? Or shall it be left to chance? Is not prevention better than summoning the doctor?

General household sanitation may be studied with profit by every young woman who expects to live in a house. Ventilation is so meagerly understood by the average woman that one might have the impression that she does not realize that fresh air is really essential to health. Graduates of our institutions for higher education sleep by preference, not compulsion, in bedrooms in which the air is vicious, poisoning themselves with the exhalations from their own bodies. The "night air" dread, founded upon superstition and ignorance, is rife among them. But they are not the only sufferers; their children pay the penalty of the mother's deficiencies, and the gamut of child-destroying respiratory illnesses runs through all of the year excepting the summer months when air is permitted.

Bad air is one of the greatest of the curses afflicting society—far greater than alcohol, and more subtle and insidious in its operations. It is responsible for a large part of the ills which demand the services of the physician during the shut-up months of the year. Girls will not learn this at their clubs, in the current magazines, or in society; but if they are taught it in a practical and scientific manner they will remember it. The teaching upon this subject in the average class in physiology is a travesty. In one class in a large preparatory school for girls, the teacher, after elaborating upon the merits of fresh air, concluded with the admonition that the bedroom windows should be left open at night two inches at the top and bottom; and the students knew that the teacher's own practice was to keep her windows tightly shut.

Out-of-door sleeping should be taught not only to be a desirable but also a practical thing. A wholesome impetus can be given to the appreciation of fresh air by an explanation and, if possible, by a demonstration of outdoor sleeping. That more and more people are doing this should be taught; and also the prophecy may be ventured that, as the day was when bathrooms were not an essential, the day is coming when a house without provisions for outdoor sleeping will be regarded as being as incomplete as a house without a bathroom.

Cleanliness should be scientifically understood by those responsible for the order of homes and food. This subject until recently was upon a rule-of-thumb basis; but the science of bacteriology has defined just what cleanliness is and placed it within the realms of accuracy. Cleanliness has both an hygienic and an esthetic side. Its practical significance should be elucidated.



A final subject for consideration under household hygiene is that of heating. It might be said that a woman need not know anything of the methods of heating houses; but this subject is introduced because of the inconvenience, to say the least, which is entailed by the average housewife's lack of knowledge of it. It does not involve much time or labor to present to a young woman the principles of house heating, the means by which it is accomplished, its economics, and hygiene. That the American home is overheated is generally conceded. The educated woman should know what this means, and just what are the objections to it.

The peculiarities of the various methods of heating may with advantage be described—the stove, the fireplace, the furnace, radiators, and heating by indirect radiation. The dangers of those intolerable heating iniquities, the oil stove and the gas stove, should be presented. The importance of maintaining adequate moisture in the air in the presence of artificial heat is another matter worthy of attention.

*Extrinsic Social Relations.*—The home can be made of importance in its relations to the community and, indeed, this should be regarded as one of its duties to society. To be sure, the home is organized for the protection, culture, and promotion of the members of the family; but it serves its highest function when its benefits are disseminated into other homes and among other individuals.

Views differ as to how far this may be carried. It is my own opinion that it should be carried as far as possible so long as it does not interfere with the closeness and integrity of the family circle.

In considering the extrinsic social relations we should think of the important question, what can the home do for society besides sending out into the world its best products, men and women? The home as a social center should be discussed. Its obligation to invite others into it to partake of its atmosphere and to bring into it something in exchange is patent. It cannot wisely be shut off from the communal interests. Let no man regard his house as an ascetic monastery on the one hand or as a public tavern on the other.

The conditions which give the home social standing and the estimate which the community places upon it are worthy of consideration. Home social functions, their meaning and importance, may be impressed upon the student with advantage. In a school for girls in one of our great cities the classes appoint committees on entertainment, whose business it is on certain occasions to administer all of the business of a reception or other similar affair. This is one of the

best features of the education received by the young women in this school, although it is no part of the curriculum. These committees have the whole responsibility of decorations, ordering and paying for the food, issuing invitations, providing some special features of interest, receiving the guests, dressing and appearing graciously, harmonizing and carrying on the function, and then putting things in order when it is done. It is all of value because it is in line with preparation for life. Still, comparatively few mothers appreciate its importance. They say "My daughter receives all of this training at home." Does she? Positively no. At home, the mother does the ordering, assumes the responsibility, and demands to be the central figure of the show; the father pays the bills, the maids clear up the muss, and the mother lies in bed in the morning to get over her headache. The way to train a girl for responsibility is to give her responsibility.

The school may wisely put in its curriculum instruction in the sociology of the sort of entertainment that is worth while. View the average afternoon women's party, whether it be "bridge" or "tea," and one becomes first impressed with the superficiality and inanity of the thing. If he looks a little closer the hypocrisy can be seen just under the surface. But of open-mindedness, culture, enlightenment, or the opportunity for the propagation of an idea, he will see but little in this atmosphere of chatter, rustling silks, perfumery, and stuffiness. It is at least an opportunity for pedagogy, if not its function, to tell girls the things that are worth while and encourage their interest in them.

*Wealth and Want.*—No girl enters life with an adequate education unless she has been taught the real meaning of wealth and want. She should not be expected to pick up the essentials from the desultory reading of essays or novels or even from casual conversations or lectures. The time to impress her with the lessons of the comparative values of things is while she is studying the lessons which she understands are to prepare her for life. Let girls have presented to them in a systematic and interesting manner, by a teacher whom they respect and honor, a catalogue of the things that are worth while, the things that make for the best happiness, the things which any woman, rich or poor, can lay hold of, and which make for growth and culture. Let them be taught the real meaning of wealth and poverty.

While the lot of most women will fall with that of the so-called middle class, the student may wisely be given some instruction concerning the relations of the woman to the home under the conditions of

the two extremes—financial wealth and poverty. Consideration can be given to the obligations and opportunities of wealth. The pernicious effects of the prevalent charity of giving should be contrasted with constructive charity. And the opportunities of the poor are also worthy of being touched upon. The essential is that girls shall be given a broad insight into values, and that they shall be imbued with the spirit to seize upon and make the most of the opportunities which life offers.

*Household Emergencies.*—Household emergencies may more properly be designated without the limiting adjective, for emergencies which occur within the household may also transpire outside it. That emergencies of one sort or another are of frequent occurrence is well known. Whether or not the result is to be one of disaster is usually determined by the presence of some individual who knows what to do and does it. It is not necessary to enter into a discussion of all of the unexpected calamities which may confront the household. The chiefest belong in the category of bodily traumatisms, drowning, sicknesses, and fire. Some instruction in first aid to the injured should be given to every girl who is to have a practical education. She may not be made able to meet with perfect scientific skill the requirements demanded in a case of hemorrhage, fracture, choking, or fainting, but she can be put in possession of sufficient knowledge so that she shall not stand by, scream, and wring her hands in helpless misery. She should have in her mind enough practical knowledge to know that there is something to be done at once. She can at least be saved from doing some absurd and unscientific thing which can only have the effect to prolong delay and make it seem that something is being done when it is not. Every ambulance surgeon knows of the unnecessary waste of life due to simple ignorance of the fact that any accessible bleeding can be controlled by the simple expedient of making pressure on the bleeding vessel. Children and loved ones perish before the eyes of the helpless because of ignorance of this.

To overcome the fear and awe inspired by a bleeding wound, a practical demonstration may be made with a dog or cat, and the girl who participates in the experiment will find that it gives her confidence which she will carry with her all her life. It is said that "a little knowledge is a dangerous thing," but this is a vicious doctrine. It should never be promulgated unless accompanied with the proviso, "but not so dangerous as none." The reason that people stand paralyzed with inaction in the presence of an emergency is not so much



because of some inherent mental process which causes inactivity under such circumstances as because they do not know what to do. That is the reason why they do nothing.

Emergencies peculiar to fire are among the common causes of calamity. No girl can claim to be well educated unless she knows (1) how to put out a fire, (2) what to do when her own clothes are on fire, (3) how to deal with another person whose clothes are on fire, and (4) how to preserve herself in the presence of fire.

Two experiences may be cited which have come within my knowledge while this paper was in process of development. One day I saw a beautiful girl of sixteen on her way to school. Under her arm was a Latin text book. I wondered at the time if she were really studying what would be of help to her in life. Three days later I learned that she was dead. These are the circumstances: Before retiring at night she tried on in her bedroom a new skirt of mercerized fabric which she was to wear to a party the following day. The head of a match flew off and ignited it. She ran into the hall screaming for help. Her mother rushed out and saw at the head of the stairs a column of flame mounting so high as to completely obscure the face of the girl. A man finally reached the scene and threw a coat around her as she stood. No one had ever told the girl what to do in such an emergency. She could think of nothing to do because it had never been put into her mind. All that she knew about fires of this sort was that the victims had suffered a horrible death. She had read of such things and had heard them discussed. Her thoughts were of the horrible death that confronted her. She did not know that the worst thing to do was to go into the hall and stand at the head of the stairs. She did not know that the best thing to do was to throw herself flat on the floor and pull the bed clothes, rugs, or any other heavy fabrics, over everything but her head. Nor did the man who came to her rescue know that to keep the flames away from her head he must lay her prone. She died within a few hours; and the Latin class lost one of its best pupils.

A short time later in the same neighborhood in a large educational institution, a class of girls was holding a sheet and pillow case dance. A girl, nineteen years of age, to replenish a pyrotechnic flame poured alcohol from a bottle upon a dish of burning alcohol. The explosion set fire to her costume. In an assemblage of fifty young women there was not one who had confidence that she knew what to do. What happened was that the girl's costume burned until she was beyond



recovery. She lived a few hours. Two others were badly burned by trying to put out the flame. The costume that caught fire was a cotton sheet. It could have been pulled off in a few seconds. There was plenty of time to have lain the girl on the floor and covered her body up to her neck with sheets worn by the other girls, but it was not done.

These two cases are cited as typical of common occurrences. Almost every large general hospital has its quota of cases of burns all the time. I take down the reports of two such institutions and find that 6 per cent of their deaths among surgical patients are from this cause. Most cases occur among women. Every ambulance surgeon has much experience with this particular injury. Women continue to be burned to death because they do not know what to do.

*Conclusions.*—The object of this course of training in the conduct of life, here set forth, is to prepare young women for complete living, to give them an insight into the things worth while, the essentials which make for the full life of joy and efficiency—all with special reference to the home. There is no such thing as culture without vital application. The mind of the girl is occupied with airy dreams of parties, smart clothes, and young men, because the significance of these things has not been disclosed to her and because nothing more substantial has taken their places. Latin or literary criticism will not occupy the mind of the average girl because these studies lack the pragmatic quality of fitness. But a practical knowledge of the everyday things of life about the girl, the things which are worth while, can be made to occupy her mind because their applicability is everywhere manifest. And the airy dreams can be turned into useful channels if their meaning and value are disclosed to her.

It will be found that there are women who are not in sympathy with such a course, holding that household work is drudgery from which the modern woman must be emancipated. They argue that many functions, once a part of the home, have been taken out of it and still more are to follow. Some go so far as to strip the home of pretty much all its erstwhile activities. Whatever may be the merits of these contentions, three facts remain:—(1) No matter what the future may have in store, the present order demands that many things shall still be done in the home; (2) the homes of women who are busy advocating communalization of the domestic functions are usually lacking in the evidences of efficient home administration (while telling other people how to live, their own hearthstones are unkept); and (3)

finally, of all the activities in which a woman may be engaged, and it must be granted that she should be occupied, she is best adapted to be employed in the maintenance of her home—this is the function for which by nature she is constituted, which is capable of giving her the largest measure of happiness in return, which is the field in which she can be of the greatest service to the community, and which has possibilities for culture beyond that of any other employment.

It may be said that these subjects are so simple that every girl should learn them at home, but they are so simple that even the home thinks the girl will absorb them out of the atmosphere. Whatever may be thought on the matter, the fact is that the girl does not learn them, chiefly for the reason that it is nobody's business to instruct her specifically in them.

Many a girl leaves college with no adequate idea of the importance of the home and its possibilities for happiness. Often her own home has not exemplified the best ideals. Too often she thinks of the home as a prosaic affair, a sort of necessary ennui, and she aspires not to be the maker of a home but to be something great—a social worker, intent upon other people's affairs, a suffragist, a reformer, or a writer—failing to realize that the most efficient social workers and reformers are they who have learned the ideals of the home, and that the only effective preparation for writing is not in learning how to write but in having experiences with things that are worth writing about.

This course will be found not acceptable in conventional institutions because it takes "too much time." Yet these institutions are sending out into the world with a diploma, certifying to their attainments, young women who are lacking in qualifications in every one of the eleven major subjects herein presented. As though an analysis of the details of *Paradise Lost* were of more importance than the details of a home; as though a study of the horrible life of Henry VIII might be of more use than a knowledge of the practical significance of matrimony; as though a classification of the Georgian poets were more important than the classification of food stuffs; as though ability to seem learned, by virtue of a smattering of trivial knowledge, were more important than the actual fact of being learned by virtue of the possession of knowledge which should make for efficiency and happiness. The study of the useful cannot be said to take too much time in any institution which is giving time to things of minor importance. It is *Paradise Lost*, Henry VIII, and the Georgian poets, that take too much time.

A cultured person is one who is familiar with the general principles of world knowledge, who loves the truth, whose mind is not beset with superstitions, who prefers and encourages what is beautiful and good, who differentiates the important from the trivial with a disposition favorable to that which is important, who is so perfect in his ability to perform well at least one thing which is useful that he excels most men in this particular function, who habitually performs services which are useful to mankind, who finds pleasure in the performance of such services, who is kind and possessed of sympathy for others, whatever their station, who adds to these initiative and self-reliance, and who when overcome by infirmities still is bereft of none of these qualities but that of action. Such is a cultured person, man or woman. This is quite different from the culture which the schools have recognized. This is culture of activity and usefulness; not that of learning.

The modern school system is directly descended from that education which sought to prepare its pupils for idleness by filling them with a sense of superiority to useful work. This was accomplished by occupying itself with such learning as could not be employed to grapple with the daily problems of the world about. Much that is of little use has been replaced by the study of things of greater service, but still there remains a disproportion between that of lesser value which is taught and that of greater value which is not taught. The process of evolution in the modern school has operated but tardily. Better results could have been secured by revolution. If some group of cultured people could have organized a modern school system *de novo*, with utter disregard for the learning of the past, as though there had never before been any schools, the result would have been admirable. But the traditions are upon us like an incubus. It is a difficult task to shake them off. They hold us to the past.

It is fortunate that we have a newer conception of culture. It is most fortunate that according to this conception, culture is only to be had in the pursuit of the useful.

## SOME PRACTICAL ASPECTS OF THE TEACHING OF DIETETICS.<sup>1</sup>

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Sixteen institutions of college grade, distributed from east to west, from the State of Washington to that of Tennessee, replied fully to a questionnaire as to the courses they are offering in dietetics. Such points were covered as the amount of time devoted to the course, its pre-requisites, its purpose and scope, the proportion of laboratory work, the computations made, and the text and reference books found most useful.

From the returns we would draw the following conclusions: Of all these the undeveloped course at the University of Washington gives the least, with 54 hours and a prerequisite of chemistry, physiology and cookery; while Simmons College stands next, with a higher prerequisite only. The one which covers the most ground is The New York State College of Agriculture, as the course goes throughout the year, 36 weeks, 8 hours a week, or an aggregate of 288 hours, with a prerequisite of biology, botany, physics, two years' chemistry, physiology, nutrition and economics. The mean is that at the University of Wisconsin, as yet undeveloped. Teachers College, Columbia University, stands near the mean with an aggregate of 90 hours and prerequisites of biology, physiology, two years' chemistry, and two years' cooking, carrying parallel with it, if desired, courses in dietaries and nutrition, and leading to an advanced course in nutrition and dietetics. The chief criticism of all of the courses seems to be in the small amount of time given to the consideration of cost.

To sum up, then, the courses are usually called Dietetics; they are given for one semester of 16 to 18 weeks' duration, and average 6 hours, 2 hours of lectures and two 2-hour periods of laboratory work, weekly; some cookery, chemistry and physiology are prerequisites;

<sup>1</sup> Extracts from a Thesis presented in April, 1910, to the Faculty of Philosophy, Columbia University, for the degree of Master of Arts.



and the course is either parallel or prerequisite to therapeutic cookery and dietaries, and may include home nursing and diet in disease.

Having thus reviewed the work of the schools the country over, our next attempt is to draft a course which shall be useful and practical as well as scientific. We would aim to make the course one leading to general knowledge, rather than for professional use, and making the subject vital with relation to accuracy, economy, and systematic management of food and the nutrition of the human mechanism by the diet. It seems that this is better accomplished in those schools where there are many and various prerequisites and in which the subject leads to further work and investigation, so that the subject matter of this course is focused and concrete. Evidently such courses as introductory and simple cookery, the economics of food production and utilization, biology, physics, chemistry (inorganic, organic, and food), hygiene, and physiology should be prerequisites; whereas such courses as institutional and home dietaries, physiology and nutrition, therapeutic dietaries and cookery should be subsequent courses. The last three of these, together with physiological chemistry, care and feeding of infants and children, bacteriology, and experimental cookery, might be parallel. The best assignment of time seems to be from 6 to 7 hours, of which 4 are given to laboratory practice in the weighing and preparation of the food materials; the rest of the time being given to lectures and discussions or quizzes on the subject matter.

The scope as stated in the catalogue might read as follows:

Dietetics. Lectures, conferences, and laboratory work. 4 points. 2 lectures, 2 laboratory, 1 semester. Total, 96 hours.

To be taken by all candidates for a B.S. degree.

A study of the fundamental principles of human nutrition and food values under varying physiological, economic, and social conditions; historic outline of dietary investigations and modern dietary standards, with popular misconceptions as to food; the construction of practical menus for individual, family and large groups; special diets, such as infant feeding and therapeutic diets. Prerequisites: cookery, physics, chemistry (inorganic, organic, and food), biology (including some bacteriology), physiology and hygiene, and applied economics.

To explain more fully: The course should be a study of the relative composition of the human body, its waste and repair, and the chemistry and physiology of digestion, absorption and metabolism of protein, fat, and carbohydrates, as governed by age, sex, occupation, season, climate, health, and inherited tendencies; the composition of various typical foods and their calorie or fuel value as explained by the physical

aspects of heat; the proportion of nutrients and ash constituents; the limitations governed by cost, and the relation of national combinations of foods and dishes; a brief outline of the dietary investigations and standards involving the decision of the individual standard; the collection of menus; the means of applying scientific principles in planning and constructing practical menus for the individual, typical family, and large group, with regard to the proper and attractive combination of foods, involving some of the most typical misconceptions as to food, such as the value of doughnuts, fried foods, pork, cream, onions, potato, and the use of water; nutritive value and cost of food; finally such special dietaries as feeding of infants and children, menus for the sick and convalescent, and in extreme age.

We shall find that the student, in order to save time and strength, will need in this work to have had an initiatory course in heavy practical work in the preparation and service of foods. It would be well to carry at the same time a course in experimental cookery or large-quantity cookery or both, and it might well lead to courses in sick-room cookery and in the preparation of infants' and children's foods. Of the sciences, physics will be necessary to understand calorimetry, fuel values, and combustion; biology for the relation of the body to the food and to bacterial action; chemistry for the composition and reactions of the foods, and the relation and requirement in mineral or ash constituents; physiology, for a proper understanding of the body itself, its anatomy and metabolism; physiological chemistry would be eminently profitable in order to comprehend well the complete metabolism of the food elements, and the waste products, also the special diets as regulated by age, health, or disease. Of course the more the student could have of the theoretical medical sciences, the better. This side of the work naturally leads to deeper study of normal and abnormal, or therapeutic diets, and those in different parts of the world. Various general courses in economics of a philanthropic, sociological or institutional nature would be very useful to the student as well as interesting and broadening. If considered from the standpoint of pedagogy or the teaching of dietetics, a maximum of science would be advisable, and should be preceded by a course in psychology, applied psychology, ethics, and the history of education, and some course in the methods of teaching. The last two, however, might easily be taken parallel. If for institution management, it should undoubtedly be preceded by courses in elementary and large-quantity cookery, with a heavy science prerequisite, and should have as parallels, therapeutic

cookery, home nursing, and institution dietaries, that is, dietaries as applied to a large group.

With these things in view, and realizing that the work is incomplete unless both theory in lectures and quizzes and practice in preparation in the laboratory are given, we may consider a list of 32 lessons, which may be used and adapted according to necessity. These have been arranged to cover 16 weeks of 6 hours a week, 2 hours for lectures and two 2-hour periods for laboratory work, or 64 lessons, the laboratory work being correlated to the lecture work, or vice versa. The course is best taken in the senior year, or perhaps the junior—not before. Inspection of lecture or laboratory note-books, or both, may well be left to the discretion of the instructor.

#### SCHEME OF LESSONS.

1. Introductory; discussion of the dietary problem, books, description of Prof. Willard's method of computation.
- 2, 3, and 4. Review of the physiology of digestion, including the anatomy, differentiation of foods, and action of digestive juices.
5. End of the review with an open discussion and summary.
6. Commence the study of the composition of foods, beginning with fruit, cereals, sugar, milk, eggs, cream, butter, etc.
7. Instruction in the method of computing 100-calorie portions.
- 8, 9, 10. Continue chemical composition of foods, with the 100-calorie computation of recipes.
11. Review of the composition of foods and general discussion.
- 12, 13. Comparative nutritive value of foods most used: Cereals, vegetables, fruits, milk, eggs, meats, fish, etc.: and relative cost of each.
14. Comparative nutritive value of the less common foods.
15. Methods of measuring the energy requirement. Reports on the computations of the students. N. B. This only if there is no laboratory work in connection with the course.
16. History of standards of food requirement, and points governing these.
17. Review correlating chemistry and the nutritive value of foods and standard requirements.
18. Ash constituents and requirements.
19. Five or ten minute reports from each student of collected menus with criticism of each. Special attention to values from the economic standpoint.
20. Quiz by presentation of a menu for revision.
- 21, 22. Discussion of cheap dietaries and menus for improvement without raising the cost.
23. Changes in medium cost diet to high cost diet and discussion of values.
- 24, 25. Diet for a family of normal adults and adolescents; changed to (1) for the aged, (2) for heavy labor.
26. Discussion of noteworthy national diets and what they offer to Americans.

27. Ten minute reports of changes necessary in the diet in given diseases.
- 28, 29. Care and feeding of infants and young children.
30. National dishes compared in value and cost with the nearest American equivalents.
31. Summary and oral quiz.
32. Open discussion on requested topics.

#### SEQUENCE OF LABORATORY WORK.

1. Measurement of ordinary uncooked foods by Willard's method.
  2. Measurement of ordinary cooked foods by Willard's method.
  3. The 100-calorie portion of ordinary uncooked foods.
  4. The 100-calorie portion of ordinary cooked foods.
  5. The 100-calorie portion of the less usual foods.
  6. Comparative study of the amounts for equal nutritive value in foods of the same class, 100-calorie basis.
  7. Sample diets (3 meals) under given requirements, noting the cost in each case.
  8. Sample diets (3 meals) according to given authorities, noting the cost as above.
  9. Three typical meals showing the ash constituents, noting the cost as above.
  10. Three meals under given requirements re-adapted to low and high cost, etc.
  11. Preparation of three meals for diets in common diseases, the actual amounts being calculated.
  12. Preparation of infants' food and children's meals.
  13. Preparation of foreign dishes and American equivalents.
- N. B.—This gives 13 topics for the 32 periods, averaging one for each two and one-third lessons.

With the foregoing lessons in mind, we may proceed to a detailed discussion of them and to the texts and reference material advisable. Referring to the various texts in use, Office of Experiment Stations Bulletin 28 of the U. S. Department of Agriculture, *The Chemical Composition of American Food Materials*, is an absolute necessity: *Hutchinson's Foods and Dietetics* is a close second, but it would seem better to give the bulk of the data by lectures, making *Hutchinson* a semi-text, as it were, and requiring the students to own it. The following is the list of books most used by the several schools for reference on the subject:

(1) Chittenden: *Nutrition of Man*; (2) Friedenwald and Rühner: *Diet in Health and Disease*; (3) Holt: *Care and Feeding of Children*; (4) Howells: *Text-book of Physiology*; (5) Lusk: *Science of Nutrition*; (6) Richards: *Cost of Living*; (7) *Farmers' Bulletins of the U. S. Department of Agriculture*.

To this may be added at will any from the following long list, which are used as references in different places:



(1) Abderhalden: Text-book of Physiological Chemistry; (2) American Text-book of Physiology; (3) Armsby: Principles of Animal Nutrition; (4) Armstrong, E. F.: Glucose and the Glucosides; (5) Atwater: Chemistry of Foods and Nutrition, et. al.; (6) Bailey: Text-book of Sanitary and Applied Chemistry; (7) Baylies: The Nature of Enzyme Action; (8) Bevier: Selection and Preparation of Food; (9) Brown: The Baby; (10) Bunge, Gustave von: Textbook of Chemistry and Physiology; (11) Chapin: Theory and Practice of Infant Feeding; (12) Chittenden: Physiological Economy of Nutrition; (13) Dukes: School Diet; (14) Fletcher: A. B.—Z. of Our Own Nutrition; (15) Gautier: Diet and Dietetics; (16) Grey: Anatomy; (17) Halliburton: Essentials of Chemical Physiology (see Kirkes); (18) Hardy, W. B.: Colloids; (19) Horgan: How to Feed Children; (20) Hopkins, F. G.: The Development and Present Position of Physiological Chemistry; (21) Hough and Sigwick: Human Mechanism; (22) Kirkes: Handbook of Physiology; (23) Leach: Food Inspection; (24) Leathes, J. B.: The Fats; (25) Leffman and Brown: Food Analysis; (26) Ling: The Polysaccharides; (27) Long, J. H.: Textbooks of Chemistry and Physiology; (28) Mann: Chemistry of Proteids; (29) Mitchell: Meat; (30) Norton: Food and Dietetics; (31) Osborne T. B.: The Vegetable Proteins; (32) Pattee: Practical Dietetics; (33) Plimmer, R. H. A.: The Chemical Constitution of Proteins; (34) Remsen: Inorganic and Organic Chemistries; (35) Schryver, S. B.: The General Character of the Proteins; (36) Sidgwick and Wilson: General Biology; (37) Spargo: Common Sense of the Milk Question; (38) Spatholitz: Anatomy; (39) Starling: Text-book of Physiology and Pathological Chemistry; (40) Thompson: Food and Feeding; (41) Winton: Microscopy of Foods; (42) Wiley: Food and Food Adulterants; (43) Yeo: Food and Health and Disease; (44) *American Journal of Physiology*; (45) Bibliography of *Journal of Home Economics*; (46) *Journal of American Medical Association*; (47) Lake Placid Reports.

Most of the trouble in the development of the courses in the past has been due to the fact that so large a mass of data was taught without enough emphasis being put on the actual application. Besides this, there has often been too much time spent on unnecessary and unapplied calculations. It is wise to have the laboratory work as part of the course to emphasize the theory of the class room, and it is absolutely necessary to illustrate each bit of calculation of food, of dish, or of menu by actual weight measurement and preparation in the laboratory.

The idea with the laboratory work is to carry the practice as nearly parallel with the lecture as is possible and feasible. The first effort should be to give the student a visual notion of the value of foods, and an easy way of figuring on them; next, to make clear the use and calculations of the 100-calorie portion; this accomplished, to take the usual portion served in meals and fix its calorie value. It should then be an easy transition to the preparation of all sorts of meals, without very much extra calculation or computation. The purpose with

regard to the meals for diseased conditions is to relate these meals to the normal dietary and not to infringe in the least on the courses in cookery for invalids and convalescents. It seems, however, about the only time at which the student may become acquainted with the appearance and preparation of infant's food and proprietary foods and the making and serving of children's meals, a business too much left to the discretion, or lack of discretion, of the servants. By the incorporation of the foreign meals and foods it is hoped to point out the value that may be derived by taking the experience of other peoples and generations, this being really the survival of those meals which are fittest. It is a scheme which might well have twice as many laboratory periods.

If the instructor cares to use any graphic methods, the latest and most useful methods are those to be found in the *Journal of the American Medical Association* for April 20, 1907—an article by Dr. Fisher of Yale—and The Cornell Reading Course, Series II, Foods, Human Nutrition, No. 6, for November, 1909.

## BLACKBOARD WORK IN THE TEACHING OF DOMESTIC SCIENCE.

ELIZABETH WILLARD SAXTON.

*Teacher of Domestic Science, Seventh and Eighth Grades, Washington, D. C.*

Have you a blackboard in the room in which you teach domestic science? Of what use is it to you? Few instructors realize the value of drawing in the teaching of domestic science, and often the board is used merely for a list of ingredients, a few remarks in regard to the lessons or items concerning the note book, or sometimes not at all. The ingredients and rules should indeed be there, but is there not space for more, space where a picture could be drawn? A lesson on grains is made attractive by a sketch of a bunch of wheat. Have the children in your school ever seen wheat growing?

One of the earliest lessons given in the first year of cooking is a study of the potato. This plant is easily represented on the board. A number of pictures of the entire potato plant can be found in various books on the subject of cookery. If it is desired to show the proportional parts of starch and water in the composition of a potato a cross section can be put on the board with lines indicating these. The potato plant itself is easy to obtain, so the lesson can be given from that. The picture in the "Border of Vegetables" (Fig. 1, D) was made from a small plant, brought into the class-room by one of the pupils.

There is nothing that will make a schoolroom look more inviting than to have the blackboards decorated. Leave 10 feet or more for routine work and use the rest for pictures of objects to be talked about in the course of lessons to be given during the year.

Perhaps it would be well, in the cereal lesson, to have a picture of a bunch of wheat to show the difference between wheat and oats. If you have specimens, that is very good, but if you do not happen to have them, the next best thing to a real specimen is a drawing and this drawing should be done by the child.

In a class where the ages of the pupils range from twelve to sixteen years, there are always one or two who are competent to put on the

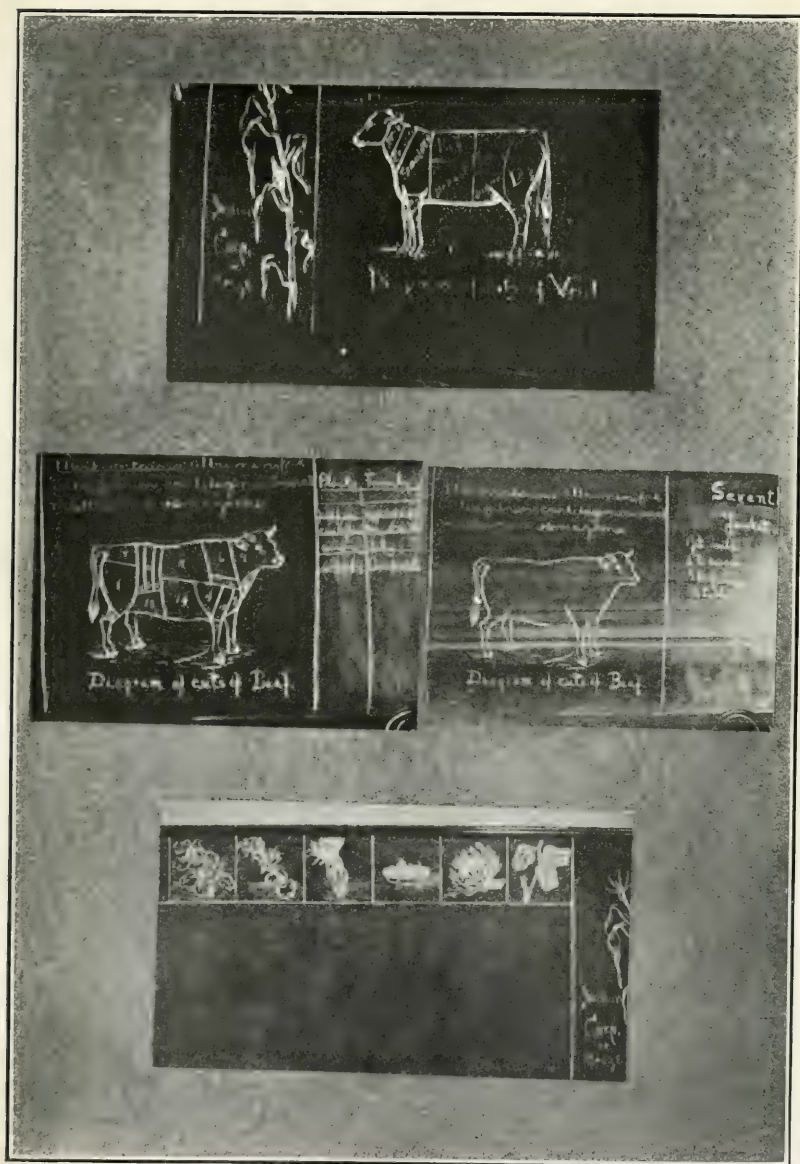


FIG. 1. USE OF THE BLACKBOARD IN TEACHING DOMESTIC SCIENCE: A, INDIAN CORN AND DIAGRAM OF CUTS OF VEAL. B, C, DIAGRAMS OF CUTS OF BEEF. D, BORDER OF VEGETABLES.





drawings. This work of the pupil need not interfere with the lesson. If she finishes her class work before the period is over let her begin the drawing. She will find time to finish it in the few moments before or after her lessons of the next two or three weeks.

It will not be long before this wheat will be made into flour. Other flours will be discussed, among them perhaps cornmeal. A picture of corn which may be appropriately drawn on the board is given in Fig. 1, A. The pictures give interest to the lesson. In talking of these flours it may be convenient and profitable to show by means of a cross section of the wheat grain how different flours are obtained by the removal of the various layers of the grain. (See Fig. 2, B.)

I have here attempted only to give suggestions for board work, not a model lesson. It would be difficult in a short paper of this kind to take up every lesson studied in the cooking class and illustrate it with a picture, but where the importance of the board drawing is felt, one will soon realize how hard it is to find in any one place pictures that will be of real help. That is the reason these prints are gathered together.

Later on the study of meats will be taken up, and here is your chance to show the pupil the location of the different cuts. With only the outline of the cow, sheep, or other animal given, let the pupil go to the board, and put in the line to show where the piece is cut. In this work, though the teacher must help the child somewhat, the latter has a feeling of self-reliance while holding the chalk in her hand and actually putting in the line. In different parts of the country the cuts of meat vary, but the pictures given will illustrate how the animal looks before and after the series of meat lessons and after the course is completed, according to the method of cutting used in Washington. (See Fig. 1, B and C.) Each child is given a hectograph diagram to paste in the back of her note book. The numbers and lines are put by them in their diagram just as they are on the board, and on the opposite page corresponding numbers with a short description telling the name and use of the piece.

Seasonings used for soups, sauces, and preserving all offer attractive board pictures, pictures which are decorative as well as useful. (See Fig. 2, C.)

Some of you may live in cities and towns near the sea, where oysters are plentiful, but with others who live inland it is not always an easy matter to get an oyster in the shell to show the class. Why not draw one on the board? This gives you a chance to show the various parts

and the child's interest is aroused at once when a fish is found with organs similar to those in the human body.

In a school I know one of the prettiest lessons ever given had for its subject the onion. On the board were pictures of every kind of onion one would be likely to know, arranged not in stilted order, but very artistically. At the desks, the children, half standing, with hands raised were ready and anxious to go to the board to point out and name the different kinds of onions. Bermuda, yellow, spring, white and Spanish onions were all there, and all well known by the interested pupils.

The child learns most readily perhaps by having the object itself in the hand and next by the picture, because if the eye is not attracted what is being said to the child often fails to make an impression on the mind. Drawing certainly helps to make shadowy things real.

A border of vegetables, one drawn each week by the girls in the class, will give an idea of the lessons given. This might also be carried out to show when the vegetables are in season or the part of the plant used. The border here illustrated shows the following series of lessons on vegetables, beginning at the right: Stuffed peppers, boiled cauliflower, baked onions, escalloped salsify, stuffed potatoes and cream of spinach soup. (See Fig. 1, D.)

A board reserved for spelling is a convenience and a help, especially if the recipes are written in composition form by the children, each one having her own note book. The hard words in the lesson are spelled by the children and put on the board. A list of these may be kept, and when there is time after a short lesson a spelling test may be given.

It is well to have a board reserved for an appropriate quotation. These may be found in the newer cook books and if desired and there is time, the quotation may be put at the top of the lesson. If it is used with the lesson it must apply to what is being cooked. One quotation will be given, not because it is nearly as good as a great many others, but because I ran across it after a long search to find something interesting on the subject, and because it can be used nicely with a lesson on brussels sprouts.

That herb which o'er the whole terrestrial globe  
Doth flourish, and in great abundance yields,  
To low plebeian and the haughty king,  
In winter, cabbage, and green sprouts in spring.

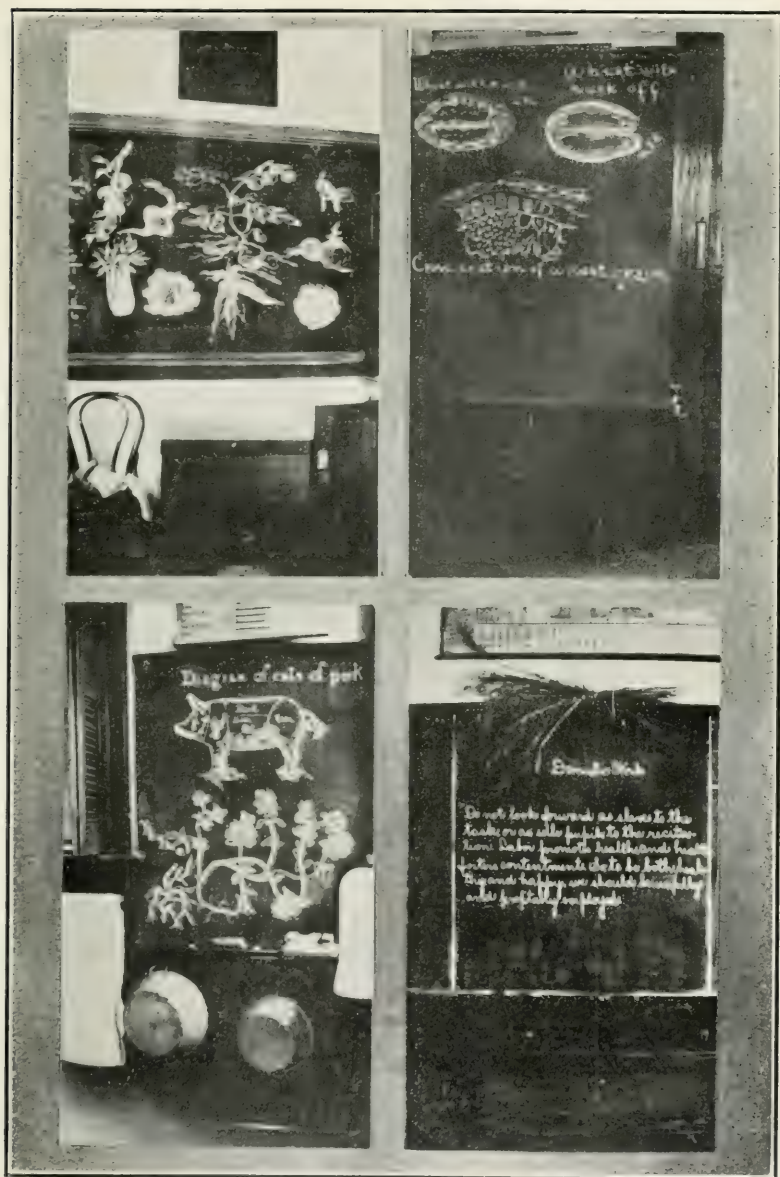


FIG. 2. USE OF THE BLACKBOARD IN TEACHING DOMESTIC SCIENCE. A, SOME COMMON VEGETABLES. B, SECTION OF A GRAIN OF WHEAT. C, THYME AND DIAGRAM OF CUTS OF PORK. D, A QUOTATION BOARD WITH A BUNCH OF OATS ABOVE.





## CATERING FOR HIGH-SCHOOL STUDENTS.<sup>1</sup>

MRS. ALICE M. HOTCHKIN.

*Supervisor of High School Lunch Rooms, Rochester, N. Y.*

To serve a successful luncheon, whether in a school or factory, the lunch-room and its equipment must first receive careful consideration. Nowhere has this been done more thoroughly than in Rochester, N. Y., in its high schools and factories.

The two high schools are practically alike, each having cost about \$350,000, and each accommodating 1240 pupils. In designing these schools, as much stress was laid upon planning and equipping the lunch-rooms as upon any part of the building. They are situated in the basement, and are light, well ventilated rooms capable of seating 1000. The Flemish oak furniture is so simple in design that it is easily kept clean by dusting every morning with a sanitary duster slightly dampened.

The counter is in the center of the room, is 55 feet long, and 12 feet wide, and like a horse-shoe in shape with the open end towards the kitchen. The top of the counter is 18 inches wide and 30 inches high, and it has two shelves underneath. Inside the counter are the steam and serving tables, milk, chocolate and water tanks, sinks and the dish washer. Over the milk tank hangs this sign: "Clean milk from tuberculin tested cows." It is through the influence and co-operation of our efficient health officer that we are enabled to serve this kind of milk. We display this sign as a suggestion to the students. Our kitchens are equipped with every modern convenience. Steam cookers are used as much as possible, for this method of cooking does not add to our expenses, since waste steam is utilized. Many labor-saving devices are used, including a potato-peeler run by electricity which peels a bushel of potatoes in five minutes, saving 8 pounds of potatoes to every bushel and using only 0.75 cent's worth of electricity.

<sup>1</sup> Read at the Lake Placid Conference on Household and Institution Management, June 29, 1910.

The menus are written on blackboards, which hang in conspicuous places. Cashiers are conveniently stationed, so that students purchase their tickets on their way to the counter. The tickets used cost only  $2\frac{1}{2}$  cents per 1000 and are burned after each meal.

Although we serve about 1200 every day in the East High School lunch-room, good order always prevails, for which there are two reasons. First, they are municipal affairs not run for revenue, and all realize that the best quality of food is furnished at cost. Second, the board of education and the principals of the schools consider the lunch-rooms equally important with any other branch of school work.

Every effort is made to have the nourishing dishes so attractive that they will be chosen in preference to those with smaller food values. Whipped cream is used wherever possible. Plain rice pudding or tapioca cream is unpopular, but if embellished with a small portion of whipped cream it at once becomes an attractive dessert. The same menu is never repeated within two weeks.

The planning of menus is a problem. Dishes which are most popular in the East High School are scorned in the West High School and vice versa. This same condition was later found in the various factory lunch-rooms of Rochester; the menus must be planned to suit the taste of the master mechanic and the common laborer, as well as for the different nationalities.

The high school lunches proved so satisfactory as to attract the attention of manufacturers of the city, with the result that six factory lunchrooms are conducted on the same plan as the high school lunch-rooms. It is interesting to note that whenever a factory lunch-room has been opened, saloons lose their patrons, for the factory employees prefer hot, nourishing lunches to liquor. In the factories the 15-cent lunch is popular, but does not find many patrons in the schools, as that amount of money is more than most students wish to spend.

To those contemplating lunch-room work, a few suggestions may be helpful. A floor space of 30 x 90 feet can be arranged to give a kitchen 22 x 12 feet, a store room 8 x 12 feet, a counter 20 x 11 and a seating capacity of 130. The manager should know every branch of the work herself, so that if necessary she can take the cook's place. The employees soon learn whether she is capable, for as a rule they are sharp, shrewd people and quickly detect shortcomings in their employer. The work should be thoroughly systematized, so that each one knows her duties and how much time is required for doing them. I have found it most satisfactory to have the women exchange

work, so that if one is absent, another can take her place. Do not economize on the cook's salary, for only the best service should be employed.

Insist upon your maids sitting at their work as much as possible. A light luncheon served to them in the middle of the forenoon is conducive to good temper, for often these women eat a light breakfast at home.

Demand absolute truthfulness from the men of whom you purchase your goods. They soon learn that your orders must be delivered when promised. Make a careful list of all goods needed, so as not to ask for unnecessary deliveries. Do not market by telephone. Meat, fruit and vegetables should be purchased by the eye and not the voice.

With the growing demand for trained women to take the management of these various lunch-rooms, the directors of the Mechanics' Institute of Rochester decided that a course should be established there for training women for lunch-room management. The first applicants were women of an inferior order, but the standard has been raised so that only educated women are now students in this course.



## REPORT ON THE LUNCH ROOM OF THE WILLIAM PENN HIGH SCHOOL.<sup>1</sup>

EMMA SMEDLEY.

*In Charge.*

In September, 1909, the William Penn High School for girls was opened in the commodious new building at Fifteenth and Wallace Streets, Philadelphia. From the attractive rooms provided, luncheon is served daily to about seventy members of the faculty and to as many of the eighteen hundred pupils as care to avail themselves of the opportunity.

In providing such luncheons, we recognize that the growing child requires a liberal supply of attractive, nutritious, easily digested food, which may be procured at a reasonable cost.

In many schools the girls are taught to cook and serve food in the class-room, but the value of this training will be lessened if the same pupil is allowed to go to the lunch counter at recess and select anything she may choose from a plentiful supply of cakes, pastry, candies, etc. So long as the school management permits this character of luncheon to be served in boys' as well as girls' schools, they are neglecting the opportunity of establishing habits as regards the choosing of food in the vast army of young people who will in a few short years be the men and women of our cities and nation.

The William Penn High School aims to train young women so that they will be equipped for the duties which life sets before them, whether in the home or the business world. The present luncheon scheme has been undertaken with the hope that there may emanate from it an influence that may become an important factor in the fulfilment of the noble purpose of the school.

This luncheon is under the care of a group of four persons appointed by the board of education, consisting of the chairman of the board in charge of the school, one other member of the committee, the

<sup>1</sup> Read at the Lake Placid Conference on Household and Institution Management, June 29, 1910.

principal and one teacher of the school. The duty of these persons is to appoint a superintendent of luncheons who shall act as purchasing agent, employ help, and have full charge of carrying out the general policy of the school with regard to the luncheon. A second committee appointed by the principal of the school is helpful to the superintendent through suggestions which it offers regarding the details specially connected with the welfare of the pupils. This committee consists of five members of the faculty, the chairman being the teacher who is a member of the committee appointed by the board. The chairman of this committee is the director of the commercial department of the school, and keeps in close touch with the methods of bookkeeping, approves all bills, and audits accounts.

The person selected by the committee to act as superintendent of luncheons has had experience in institution management, and has been a teacher of Home Economics for several years. She is fully in sympathy with the policy of the school, and aims to provide a luncheon that would be a credit to any school of domestic science.

We have been most fortunate in securing the services of ten helpers who are interested in the success of the enterprise. My assistant has had experience as housekeeper in her own home, and holds a certificate from the domestic science department of Drexel Institute. She is very capable and is glad to give her attention to every detail of the cooking, thus enabling me to carry out my ideals regarding the quality of the foods which are prepared. This trained cook has proved to be a great economy, as her knowledge of foods and her interest in the work insures uniform results in cooking, and prevents the waste of food by carefully utilizing all leftovers. The other helpers have had no special training for this character of work. They do not belong to the servant class, but have their own homes in the neighborhood and are glad to earn \$5 or \$6 a week by spending part of each day at the lunch-room. The hours for the employees are from nine until four o'clock, though a few come only during the business hours, 11 to 2 o'clock. I am frequently asked where I get such women. The answer is that they come to me and I have a long waiting list. One man is needed to do the heavy work, care for floors, operate the dishwasher, etc.

We are assisted in serving the pupils at the recess hour by twenty or more students, who are members of the cooking classes of the school, and volunteer for half the recess one day each week. For this service they are given two five-cent luncheon checks.

The period for luncheon from beginning to end is from 11:45 to 12:25. The school is dismissed in two sections, at 11:45 and ten minutes later, thereby enabling us to utilize to the best advantage our limited table accommodations and facilities for serving, as many of the pupils of the first section have finished their lunch and are ready to leave the room by the time the others have been served at the counter. Each person returns her dishes to the counter as she passes out of the room. These dishes are all stacked by the students ready for washing, as I consider this duty an important part of their training.

To give every girl first chance at the counter and the same length of time in class recitation, different sections of the school are dismissed on alternate weeks at the first bell and student helpers reverse in the same manner, one month coming the first, and the next month the last, fifteen minutes of recess period.

The board of education provides the lunch-rooms, kitchen and pantry with equipment and fuel. The cooking has been made very laborious this year because of the limited number of utensils which have been provided. With only two gas stoves and these designed for family use, it is very difficult to serve a varied menu for faculty and pupils, especially when the top of one stove is required the greater part of two days to cook the 20 gallons of vegetable soup which are required for one day. It is impossible to make as much oyster or cream of tomato soups as the pupils want because the utensils used for the soups are required each day for making the nine gallons of cocoa. In many similar ways the work is constantly complicated by the lack of adequate utensils and appliances. During the last few weeks there has been installed a steam equipment consisting of stock pots, vegetable cooker, cocoa urns, steam tables and dish-washer which will be in readiness for next year's work. With the steam cookers we hope to prepare the large quantities needed more easily, and the steam dish-washer will considerably reduce the daily labor.

Aluminum checks in three sizes, bearing the name of the school on one side and the numbers one, three or five on the other, are provided as a part of the equipment. These checks are purchased by the students before school and at recess, and used in place of money at the counters, thus simplifying the service, as each waitress always receives the correct change and puts it into a cash box which remains locked until opened by the cashier after lunch.

The faculty dining-room presents an attractive appearance when the tables are spread with linen, glass, and silver, in readiness for the

luncheon. An à la carte luncheon similar to that prepared for the pupils is available for the teachers, and in addition a table d'hôte luncheon is provided at a cost of fifteen cents, consisting of meat, vegetable, rolls, butter, tea, coffee, cocoa or milk.

Owing to the unfinished condition of the building in September, 1909, it was not possible to open the lunch-room for the use of the students until November 1. Lunches were, however, served to the faculty early in October.

Even with the prevailing high prices of food, we are able to meet our running expenses for food, service and supervision.

All food is prepared at the school except bread, rolls and ice cream. Soup, which is very popular, is served every day, the same kind not appearing on the menu two days in succession.

For five cents we serve one-fourth of a quart of soup and one roll or two soda crackers. The following varieties of soup have been served during the winter: Vegetable, tomato, cream of tomato, tomato bouillon, cream of corn, corn chowder, cream of potato, pea soup, bean soup, cream of beans, macaroni soup and oyster soup. Other five cent foods are macaroni and cheese, boiled rice with tomato sauce, scalloped rice, scalloped tomatoes, baked beans, beef stew, casserole of rice and meat, and scalloped fish.

Sandwiches are also sold for five cents each, hot roast beef and ham being most popular. Cold tongue is also used for sandwiches, as well as sardines, cheese, olives and cheese, olives, pimento and olive, egg, peanut and lettuce. Making sandwiches constitutes a small part of the daily preparations, since the majority of pupils bring this part of their luncheon from home. One-fifth of a quart of cocoa or of milk, either hot or cold, is sold for three cents. A large number of buttered rolls at two cents each are sold with cocoa or milk, making a combination for five cents, while some pupils prefer six graham or soda crackers instead of the roll for the same price. Milk and buttermilk are also sold in pint bottles.

Stewed fruit and one kind of home-made dessert are served each day, such as apple tapioca, peach tapioca, tapioca custard, cup-custards, banana custard, floating island, rice pudding, chocolate pudding, date pudding, snow pudding with custard, stewed fruits, figs, prunes, cherries, peaches, pineapple and baked apples. Gingerbread and chocolate or jelly layer cake are made occasionally. Two dried figs or eight dates are wrapped in paraffin paper by the helpers and sold for two cents a package. One, three-and five-cent cakes of



sweet chocolate and chocolate nut bars for five cents are also popular. Bananas, apples, oranges, grapefruit, grapes, and peaches are among the fresh fruits served.

From a personal investigation of the plant in which the ice cream is made we feel satisfied that it is clean and of good quality. Natural fruit flavors and vanilla beans are used in the preparation. It is cut in blocks, eight to each quart, and wrapped in paper. Each block is sold for five cents.

A typical menu for one day is as follows:

Oyster soup and two crackers, 5 cents; macaroni and cheese, 5 cents; ham sandwich, 5 cents; olive sandwich, 5 cents; stewed peaches, 3 cents; grapefruit marmalade and crackers, 3 cents; chocolate pudding, 3 cents; cocoa or milk, 3 cents; cocoa or milk and buttered roll, 5 cents; ice cream, 5 cents; crackers (two or three), 1 cent; dates or figs, 2 cents; sweet chocolate, 1, 3, or 5 cents; banana, 2 cents; orange, 3 cents; apple, 2 cents.

This menu is varied from day to day. The same dish does not appear more than once a week, but children constantly ask for something that was on the menu the previous day.

To quote from the report of the committee on high schools:

It is gratifying to be present at the school during the luncheon period and to observe the eagerness with which the pupils select from the variety spread before them. Many spend only a few pennies to supplement the cold lunch which they bring from home, while a few make two trips from counter to table before they are satisfied.

The committee has had words of appreciation from pupils and teachers which give evidence that children as well as older persons are glad to avail themselves of the opportunity of eating the right kind of food when they have the chance. And not to be overlooked is the fact that the school is educating these young women to appreciate the right kind of diet and to cultivate a taste for more wholesome food than many have had the opportunity of enjoying in their homes. This indirect benefit from the high school luncheon room is perhaps as important as the more obvious good of furnishing the girls with a substantial, digestible and suitable luncheon at a reasonable price, on every school day.

## SCHOOL LUNCHEONS.<sup>1</sup>

ALICE C. BOUGHTON.

*Philadelphia League of Home and School Associations.*

For the past three years the Starr Centre Association of Philadelphia has been supplying penny luncheons at the ten o'clock recess to the children in several of the elementary public schools in the crowded district of the city. These luncheons consist of a variety of foods, including crackers, fresh fruit in season, stewed fruit, milk, and one hot dish, such as cocoa or rice pudding or soup, each day. The actual cost of each article is one cent, and the children receive in return one cent's worth of food, for the Association pays for all the equipment and for the supervision, preparation and serving of the luncheon.<sup>2</sup>

Last January another agency, The Home and School League, entered the field. It served at the noon recess a three-cent meal, calculated, as nearly as possible to be one-third of the child's ration. The school selected, an Orthodox Russian Jewish public school, was an unsatisfactory place in which to try a new plan, as it was difficult to convince the children and their parents that all the food served was kosher.

This year The Home and School League will serve three different types of luncheon in three different schools; in one it will serve a penny luncheon at the ten o'clock recess; in another a three-cent meal at noon, with a table containing penny luncheons for any children who have not three cents to spend; and at the third school a penny luncheon at ten o'clock, and a three-cent meal at noon.

At stated intervals a physical examination will be made of the children of each school and a record kept of each child. Under the direction of the committee making the investigation, a home and school visitor, who has had a normal course in domestic science as

<sup>1</sup> Read at the Lake Placid Conference on Household and Institution Management, June 29, 1910.

<sup>2</sup> For a more detailed account of these luncheons see a previous note (J. H. E., 2, (1910), No. 2, pp. 178-180.

well as training in social service, will follow the children into their homes in order to find out existing conditions and to put the families in touch with remedial agencies. By keeping a record of the children buying the luncheons a comparison is possible, not only between the children who take the luncheons and those who do not at any one school, but also between the value of different types of luncheons.

In the districts chosen there is a good field for investigation because of the industrial conditions which cause the same poverty and ignorance and the same neglect of the children by parents of many nationalities who are engaged with various kinds of labor.

Of course, this plan is only tentative and may not prove practical, but from the active coöperation of principals and teachers and through the earnest efforts of those engaged in the investigation much interesting and profitable information should be gained as to needs, and as to methods of reaching the needs, of the hundreds of undernourished children in our city schools.

## DIET IN RELATION TO GROWTH.<sup>1</sup>

GWENDOLYN STEWART.

*Domestic Science School, The International Correspondence Schools, Scranton, Pa.*

School diet includes, in a broad sense, the diet of students between three and twenty-five years of age. These years of growth—twenty-two years—may be divided into four physiological periods: First, early childhood—from infancy to the completion of the period of rapid growth—which may be characterized as *the restless age*; second, medium or middle childhood—a short period after the rapid period of growth—which may be characterized as the *slowing-up period*; third, later childhood—a uniform period of growth extending from the end of the slowing-up period to the beginning of adolescence—called the *pre-adolescent age*; and fourth, *adolescence*—which extends from approaching maturity to the completion of growth.

The restless or nervous age applies very often to children between the ages of three and eight who seem restless and to need the dietetic treatment for nervous temperaments. Dr. O'Shea, in an article in the *Popular Science Monthly* for 1897, cites cases of extremely nervous children being cured by proper diet. Two such children of five and seven years were found to be suffering from a deficiency of protein constituents of the blood; the diet was regulated accordingly and the children were soon restored to normal condition. It is believed that there is a close connection between mental development and the character and quantity of the food.

During this period there is an intense development of the sense of taste and a desire for variety in food. Edwin A. Kirkpatrick, in his *Fundamentals of Child Study*, says:

Variety in food develops the instinct of eating in a positive way so that by the time a child is three or four years old sensations of taste occupy a prominent place in his consciousness. This continues for several years and there is probably no time in life when the gustatory pleasures and pains are more intense than at five or six years of age. To gratify the desire for agreeable food and to avoid disagreeable tastes is at this time one of the chief motives in life.

<sup>1</sup> An abridgement of a paper read at the Lake Placid Conference on Household and Institution Management, June 29, 1910.



If it is possible to influence temperament through diet, it is at this early period, for it is in this physiological period, more than in any other, that the seeds of character which grow and bear fruit throughout life are planted. A professor of sociology once said that if he were to choose a dean of women he would examine, not the record of her degrees and subsequent work, but the record of her life before the age of seven.

The second physiological period, which in a general way includes the years of childhood from eight to ten, has been characterized as the slowing-up period because this age is marked by a general slowing-up of growth when metabolism is lessened and all activities of the body are retarded. Growth in childhood is rhythmic—a movement of alternate troughs and crests and this is a pronounced trough. The years just before this are those of very vigorous development and the body seems to need a respite in which to repair the unusual expenditure of tissue—it is as it were a sort of spore stage, and if the necessity for rest and care is recognized, the following years will be all the more full of vigor.

Unless this pause upon the part of nature is supplemented with careful attention to general health, diet, and careful attention to avoiding overtaxing the child, chorea, St. Vitus' dance or other diseases may develop during this period. As regards diet in pathological conditions at this period, however, it is important that, as with disease in general, the advice of a competent physician should be obtained.

This slowing-up period is also marked by grave tendencies to infection. With this weakened resistance to infectious diseases great care should be taken with the food supply. "For this reason, as well as others, it is safest not to give meat to a child before the age of ten at least [or until the end of this spore stage]. Before that the child can get all the necessary nitrogenous food from the daily allowance of four glasses of milk, one egg and the usual quantity of bread and cereal," to quote from Miss Hunt in *School Meals for Children*. Milk, in this period, may be supplemented with cocoa.

Later childhood, the third physiological period, from the end of the last period to the beginning of the adolescent age, is designated as the pre-adolescent age. This period is characterized by a more uniform growth during which there is usually no marked nutritional disturbance. It is the time of regular, happy life for normal children in preparation for the years of more intense activity. Economic con-

ditions seem to affect growth at this time more than later on. Dr. Key, who has made extensive observations upon the growth of children, says:

The economic circumstances in which the children live exercise considerable influence on their physical development. The children of the poorer classes fall behind their companions of the same age from the homes of the well-to-do both in height and weight. The period of feeble development just before puberty is longer for the poorer children.

The weakened resistance of the body to infectious diseases, so characteristic of the preceding period, continues relatively weak. The use of meat at this age is very general, and great care should be taken in providing a pure supply.

The age of adolescence covers a long period, including the life of college as well as high school students. The dietitian can by careful, watchful diet during the college period strengthen the influences of the body for a sane, normal, healthy life. The diet of this period requires as careful attention as that usually given to the earlier years of adolescence. The protein food should be reduced in quantity in proportion to the lessened demands of growth, other satisfying food being given in its place. I myself would like to make a plea for carbohydrates in the form of sugar, having observed among college boys that this craving is the most healthful a boy may have. This recalls a student boarding table where an attempt was made to meet the "increased price of living" by serving at noon two dishes only—one a meat dish, and the other a vegetable or cereal, with no dessert, or as more appropriately called by the English a "sweet." The boys at the table invariably made their own dessert, which they craved, by covering their slices of bread with sugar. I sincerely contend that a better way to meet the higher prices is indeed to serve only two dishes, but to make one a substitute for meat, and the other a simple appetizing sweet dessert.

Dr. Winfield S. Hall, in *Nutrition and Dietetics*, alludes to the use of sugar as an important part of the diet during adolescence.

The craving for sweets is a natural one. They should be eaten immediately following a meal, for then they seldom disturb digestion. Sweets are such a condensed form of energy that the craving for them at this time seems almost instinctive.

The evening meal should be as free as possible from all irritating substances and the attractiveness of service should be emphasized.

Dr. Hall recommends to young men, in his book *From Youth Into Manhood* that a light supper be taken at night with the heaviest meal in the middle of the day.

A college dining-room should maintain in a large measure the simplicity, wholesomeness, and attractiveness of the diet of childhood. The life of a student is one of peculiar strain and confinement and the diet should be regulated accordingly. It should, however, be served in such a way as to develop as far as possible the amenities of life. The rough and ready freedom of college life has its delights, but for many it is the best opportunity for social culture, and the etiquette of dining may well be included among the requirements of polite life. A college student, living in the resident hall, once remarked that she would have to go to a finishing school on leaving college in order to get into good habits of living again.

There is much to be said in favor of schools and colleges which require a change of costume for the evening meal. Perhaps there is hardly a habit more conducive to the spirit of repose and healthful culture during the evening than a wholesome preparation of this kind for this constant daily social gathering.

During a recent visit to Holloway College, in England, I was impressed by the daily ceremony of the dinner hour. Every one is required to dress for dinner, very simply, but a change is imperative. Each student is the hostess or guest of another student, the hostess being responsible for the seating and entertainment of her fellow student whom she has selected as her guest. Just before the dinner hour all gather in the library and forming a procession, with the president and instructors at the head, march to the dining room.

On another occasion, when a guest at dinner at one of the Oxford colleges, I noted that the faculty and students withdrew at the close of dinner to the social or common room, as it is there called. Coffee and wafers were served and a social half hour was spent around the fire.

[An increasing amount of attention is being given to the general subject of the feeding of children. For an additional discussion and summary of data the reader is referred to a recent bulletin from the Nutrition Investigations of the U. S. Department of Agriculture,<sup>1</sup> and also to Miss Hunt's bulletin<sup>2</sup> referred to above. A recent English treatise<sup>3</sup> also contains an excellent discussion.—Ed.]

<sup>1</sup> U. S. Dept. Agr., Office of Experiment Stations, Bul. 223, pp. 87-98.

<sup>2</sup> U. S. Bur. Education, Bul. 1909, No. 3.

<sup>3</sup> *A System of Diet and Dietetics*, edited by G. A. Sutherland, London.

## SUGGESTED DIETARIES.

Suggested menus for children of different ages which it is believed are in general accord with the views expressed in the paper are given in the following pages:

## CHILDREN'S DIETARIES.

Dietary for Children of  $2\frac{1}{2}$  years. Assumed Body Weight 30 lbs. (14 kg.).

*Menus.*

7 a.m.—Orange juice, 3 oz.; oatmeal, 2 tablespoonfuls (dry); cream, 2 tablespoonfuls; milk, 1 cup; toast, one-half slice; butter, one-half tablespoonful.

10 a.m.—Milk, 1 cup.

2 p.m.—Milk, 1 cup; baked potato (half a potato); one baked apple; one poached egg.

6 p.m.—Milk, 1 cup; toast one-half slice; butter, one-half tablespoonful.

*Nutritive Value and Cost of the Above Dietary.*

| MATERIAL.    | WEIGHT. | PROTEIN. | FUEL VALUE. | COST.    |
|--------------|---------|----------|-------------|----------|
|              | Oz.     | Gms.     | Calories.   | Dollars. |
| Milk.....    | 34.4    | 32.18    | 675         | 0.20     |
| Oranges..... | 3.0     | ....     | 30          | 0.05     |
| Oatmeal..... | 0.44    | 2.10     | 50          | 0.0015   |
| Cream.....   | 1.00    | 0.70     | 55          | 0.04     |
| Toast.....   | 0.68    | 1.79     | 50          | 0.0027   |
| Butter.....  | 0.46    | 0.14     | 100         | 0.014    |
| Potato.....  | 2.10    | 1.32     | 50          | 0.01     |
| Apple.....   | 3.30    | 0.25     | 50          | 0.05     |
| Egg.....     | 1.29    | 4.81     | 50          | 0.04     |
| Totals.....  |         | 43.29    | 1110        | 0.408    |

Dietary for Children of 4 years. Assumed Body Weight 40 lbs. (18 kg.).

*Menus.*

*Breakfast.*—Oatmeal, 2 tablespoonfuls (dry); cream, 2 tablespoonfuls; milk, 1 glass; toast, 2 slices; butter, 2 teaspoonfuls.

*Dinner.*—Omelet, 1 egg; spinach, 1 cup uncooked; milk, 1 glass; bread and butter, 2 slices; orange charlotte, small serving.

*Supper.*—Zwieback, 1 slice; cream of wheat, or similar wheat food, one-twelfth cup (dry); cream, 2 teaspoonfuls; milk, 3 teaspoonfuls; baked apple pulp, 1 small apple; milk, 1 glass.

10.30 p.m.—Milk, one-half glass.



*Nutritive Value and Cost of the Above Dietary.*

| MATERIAL.                             | WEIGHT.    | PROTEIN.    | FUEL VALUE.      | COST.           |
|---------------------------------------|------------|-------------|------------------|-----------------|
|                                       | <i>Oz.</i> | <i>Gms.</i> | <i>Calories.</i> | <i>Dollars.</i> |
| Milk.....                             | 34.4       | 32.18       | 675              | 0.15            |
| Oatmeal.....                          | 0.44       | 2.10        | 50               | 0.0062          |
| Cream of wheat, or similar wheat food | 0.48       | 1.52        | 50               | 0.0025          |
| Buttered toast.....                   | 1.31       | 3.49        | 67               | 0.005           |
| Spinach.....                          | 1.75       | 1.66        | 12               | 0.050           |
| Egg.....                              | 1.54       | 4.63        | 50               | 0.04            |
| Apples.....                           | 3.74       | 0.31        | 50               | 0.05            |
| Orange charlotte.....                 | 0.34       | 0.75        | 10               | 0.0123          |
| Bread.....                            | 1.36       | 3.59        | 100              | 0.0055          |
| Cream.....                            | 4.80       | 3.40        | 227              | 0.0800          |
| Zwieback.....                         | 0.37       | 0.74        | 33               | 0.0042          |
| Butter.....                           | 0.48       | 0.13        | 105              | 0.0240          |
| Totals.....                           |            | 54.50       | 1429             | 0.4297          |

Dietary for Children of 6 years. Assumed Body Weight 44 lbs. (20 kg.).

*Menus.*

*Breakfast.*—One orange; oatmeal, 1 oz.; one egg; milk one and one-half cup; zwieback, 2 slices.

*Dinner.*—Chicken soup, 1 cup; one baked potato; asparagus, 5 oz.; bread, 1 slice; butter, one-half oz.; junket, three-fourths cup; milk, three-fourths cup.

*Supper.*—Zwieback, 4 slices; butter, one-half oz.; milk, three-fourths cup.

*Nutritive Value and Cost of the Above Dietary.*

| MATERIAL.      | WEIGHT.    | PROTEIN.    | FUEL VALUE.      | COST.           |
|----------------|------------|-------------|------------------|-----------------|
|                | <i>Oz.</i> | <i>Gms.</i> | <i>Calories.</i> | <i>Dollars.</i> |
| Potato.....    | 4.23       | 2.64        | 99               | 0.014           |
| Zwieback.....  | 0.83       | 4.64        | 200              | 0.025           |
| Orange.....    | 6.8        | 0.05        | 10               | 0.05            |
| Egg.....       | 2.68       | 9.06        | 100              | 0.04            |
| Milk.....      | 34.4       | 32.17       | 675              | 0.108           |
| Butter.....    | 1.0        | 0.26        | 200              | 0.025           |
| Asparagus..... | 5.0        | 1.1         | 20               | 0.06            |
| Apple.....     | 1.64       | 0.33        | 53               | 0.05            |
| Soup.....      | 8.00       | 8.42        | 50               | 0.123           |
| Bread.....     | 1.36       | 3.59        | 100              | 0.005           |
| Oatmeal.....   | 1.00       | 2.36        | 56               | 0.0056          |
| Sugar.....     | 0.5        | ....        | 50               | 0.003           |
| Totals.....    |            | 64.62       | 1703             | 0.508           |

## DAILY LIFE IN ITALY.

ELLEN A. HUNTINGTON.

*Director School of Domestic Science, Agricultural College of Utah.*

The first dinner in an Italian pension is a revelation. The Italians eat the macaroni, which is served in long, unbroken strings with a delicious grated cheese, by wrapping the strings around their forks assisted by a large spoon held in the left hand. It seems a most expeditious way to eat the macaroni to say the least. And one American judged that so long as he was within the shadow of Rome he might do as the Romans did—but what disastrous results followed I hesitate to tell. If any one is lacking in imagination let him try it. The macaroni is followed by some unusual fried dishes, after which comes the roast, then a vegetable, next the inevitable lettuce, and finally ice cream. This is the general order of the Italian dinner except that in many places chicken accompanies the salad and a sweet dessert may replace the ice cream. For dinner as well as luncheon there is usually some hard cheese and bread at the end.

The ice cream of Italy is most delicious, as those who have enjoyed the "cassata" of Rome will testify. Nowhere in Italy, and it is not known elsewhere in Europe, is the cassata as delicious as in Rome. It is served in the form of a quarter of a melon; the outside is a frozen cream and the inside is a mixture of whipped cream, nuts, fruits and orange peel. Truly it is a dish "fit for the gods."

The "continental breakfast" is always a disappointment, for the meagre breakfast seems but an aggravation. It consists of coffee or chocolate, rolls and fresh butter. Can one ever forget the hard rolls of Italy? No need of Fletcherism there! The rolls are large, like miniature loaves of bread, and it is impossible to eat one in less than half an hour. After once trying the coffee an American usually prefers the chocolate, for the Italian roasts the berry until it is somewhat burned, and besides, one would judge, he possesses neither the French or the German coffee pots which we prize so highly.

To many people who recall Italy the picture which comes to mind first is that of vineyard upon vineyard, growing on the hillsides.

And here are made all the wines, from the chianti so commonly used to the choicest varieties. The drinking water of Italy is said to be of the best now, but a few years ago many people suffered with a fever in Rome and other Italian cities, traceable to the water.

A drive through the streets of Naples gives one a very clear insight into the general mode of life of the Italian. The doors of the houses are always open in the summer time and in passing, the beds, several in a row, may be seen from the street. These are sometimes covered with a neat white covering, while again they are but a bundle of rags. The women sit on the door step and the children play in the dirty "front yards." Usually a wire basket holding about a dozen very white eggs hangs at the side of the door. There may be one or two goats kept in the yard or there may a dozen or more driven off at a distance in the morning and brought home at night. Goat's milk is far more commonly used there than cow's milk. If it is the latter which is used the cow is driven from door to door and the boy milks into the long, narrow-necked flask as easily as our farmers milk into an open pail. But methods of adulteration of milk are known in this seemingly unprogressive country; for the boy who drives the cow has been known to carry a rubber bag of water under his arm and coat and the bag has a long rubber tube leading from it down his sleeve to his hand. As the clever boy milks he presses the bag with his arm and a fine stream of water unites with the milk.

The Italians produce several vegetables unknown to us. One of them served in many different forms in July is the "kukutzi," which before cooking looks like a long cucumber. They also use many fruits, fresh figs and nuts.

The macaroni which they make is in my opinion far superior to the macaroni on our American markets. But to see the drying of the strings in the market where dirt can so easily blow over it makes one feel content with our product and realize how sanitation lags in Italy. A general atmosphere of uncleanness prevails; the streets are dirty; the houses which are built high and on hills are not arranged to admit of much sunlight; the furniture is usually upholstered and harbors fleas in the summer time; and the people seem to bear the earmarks of general uncleanness.

We are sure that the people have clean clothes, for are not the women to be seen washing them in all the clear streams and rivers? It is certainly more picturesque to see the women with tucked-up skirts washing clothes on stones in the streams than bending over a

wash-board in a steaming tub, though we cannot help but wonder at the continuance of the custom. In conversation a short time ago a lady told of an experience she had had in Italy. She had become much interested in their method of washing and by signs asked permission of two women to try it. After one attempt with their method she pantomimed to them again that each should take a garment and see who could wash hers clean first. The Italians used the stones but the American soaped the garment thoroughly, rubbed it all over between her hands and then rinsed it. Great was the surprise of her competitors to find that the garment was clean so long before theirs was finished. But did they adopt the method? No, she left them scrubbing the garments on the stone just as when she started.

In retrospect, such a visit makes us congratulate ourselves that the necessity for sanitation and clean and wholesome food is being appreciated more and more, and to a certain extent put into practice, in our country.



## ON THE DIETARY IN USE IN THE SOUTH PACIFIC ISLANDS.

JOHN I. LARGE.

*Government Resident Agent and Dispenser, Cook Islands and New Zealand.*

First in importance in these tropical islands is the supply of vegetables and fruit. Those common in these latitudes are the kumara (sweet potato), taro (*Arum Esculentum*), ui (yam) of many varieties, wild and cultivated, plantains and bananas of various kinds used as vegetables, papaw apple, kuru (bread fruit), tomatoes, pumpkins and squashes of several kinds. A few European vegetables grow in some of the islands, such as cabbage and lettuce. Other kinds required are imported from New Zealand and America to a limited extent.

The fruits consumed are of the usual tropical and sub-tropical varieties, including oranges, lemons, limes, shaddock, bananas, pine-apples, papaw, rose apple, custard apple, avocado pear, guava, mangoes, granadilla, melons, and grapes (these last being inferior). The cocoanut is much used, particularly by the natives, both raw and cooked; in the latter case mostly in combination with various fruits and berries in the making of native puddings or the fruits of temperate climes, canned and preserved. Jams are imported from California and New Zealand to a considerable extent.

Fish comes next in importance as an article of diet. The most common are the maroro (flying fish), caught with a scoop net by torch light at night, the mangaa (carraconta), the aai, a large fish like a groper, and caught with a hook, mullet, and various other kinds known by native names. All kinds, including turtle, are more plentiful and easily caught in the lagoon islands, and, of particularly fine flavor, the ava (as big as the aai) and the kiokio, a silvery-scaled fish about 3 feet long, are peculiar to the latter islands. Canned salmon from America, sardines, etc., are also extensively used. The fish sauce used by the natives exclusively, and to a considerable extent by foreigners all over the South Seas, is composed simply of grated cocoanut and sea water, with a few Chili peppers added. Flavored with this sauce even raw fish is quite palatable.

In most of the islands the fresh meats mostly eaten are pork and poultry, but on the more important islands like Tahiti and Rarotonga refrigerating works have been started and butchers' meat of all kinds is kept in the freezing chamber and sold at retail. Canned and preserved meats from New Zealand are greatly used everywhere; also quantities of cheese, butter and preserved milk from the same country.

The natives universally prefer their national mode of cooking by steam generated with heated stones in their earth ovens (*umu*) and many of the foreigners adopt the same mode, because all vegetables are much better when cooked with steam, than when boiled. Bread, meat, and other kinds of food are of course cooked in the usual way. "Cubiu bread" (*biscuit*) is much used to save cooking.

People in the tropics are usually afoot soon after daybreak, in order to get as much work as possible done in the coolest part of the day. About 6 a.m. a light breakfast is usually partaken of, consisting chiefly of the fruits in season. The papaw apple, like the banana, is always in season, and when sprinkled with lemon or lime juice is very cool and appetizing; it also makes a good vegetable when cooked. Other breakfast foods are porridge (*mush*), cereals of various kinds, fish, bread and butter, etc., with tea or coffee or simply water. Coconut water is frequently used at all times as a beverage. At 11 a.m. comes the main breakfast (*tiffin*), which is of a more substantial nature, though the menu is about the same. Then follows a *siesta* of a couple of hours or more, after which all work again till evening, with dinner at 6 p.m. or later. At the two latter meals claret diluted with plain or coconut water is a common beverage. These hours are generally followed at the French islands, although in British and American communities on these seas the stereotyped meal times of breakfast at 7 or 8 a.m., dinner at noon or 1 p.m., and tea at 5 or 6 are much in vogue. In any case a light diet is considered the proper thing. The less flesh eaten in the tropics the better for the health of the individual. Most of us also bar alcohol.

## THE STAFF OF LIFE.

G. W. COWGILL

*Subsistence Department, United States War Department.*

The average person in England is said to consume about six bushels of wheat in a year, while in the United States the average is estimated at four and a half bushels of wheat or 196 pounds of flour per year. Flour is made from potatoes, buckwheat, bananas, etc., but that made from wheat is used to a much greater extent than the others and is the one referred to in this article. As there are so many different kinds of wheat, and each kind is further classified into four different grades, it is a difficult problem to know just what kind of flour one is buying, without subjecting it to a thorough test. The way to determine the best flour for the purpose desired and how to use it properly is the object of this article.

The United States Department of Agriculture gives the following as a standard for good flour.<sup>1</sup>

Flour is the fine, sound product made by bolting wheat meal and contains not more than thirteen and one-half ( $13\frac{1}{2}$ ) per cent of moisture, not less than one and twenty-five hundredths (1.25) per cent of nitrogen, not more than one (1) per cent of ash, and not more than fifty one-hundredths (0.50) per cent of fiber.

Good flour should be sweet to the sense of taste and smell, having a feeling of sharpness to the grain, be free from must or other odors or tastes, and have a creamy-white shade or color. It should be strong, yielding not less than  $33\frac{1}{3}$  per cent of moist gluten, and must absorb not less than 50 per cent of its weight of water to make a dough that will just begin to stick to the fingers when lightly handled; straight, made from good, sound wheat, high ground, well dressed, and free from must, containing from 90 to 95 per cent of the whole product of the wheat in flour (that is after the feed is taken out); and must be capable of yielding a well-risen loaf of good color, texture, odor and taste. It takes about  $4\frac{1}{2}$  bushels of wheat, or 270 pounds,

<sup>1</sup> United States Department Agriculture, Office Secretary, Circ. 13 (1904), p. 8.

to make a barrel of flour of 196 pounds, the other 74 pounds being the bran, germ, etc., and known as "feed."

Wheat grown in different sections of the country varies greatly in the percentage of the yield of gluten. For instance, wheat grown in California is weak in gluten, and a much better bread can be made from it if mixed with Kansas or a Northern wheat, in about the proportion of two-thirds California to one-third Kansas or Northern wheat.

1. *Tests for color, smell, taste and feel.* The color of flour can best be determined by placing a small quantity upon a sheet of glass or a thin board, about 4 x 8 inches square, and smoothing it out with a flour spatula, pressing the spatula down to one edge of the board. Separate the flour on both sides and on the thick end with one edge of the spatula, leaving a strip about three-fourths of an inch wide on the board. On turning the edge of the board farthest away slightly down, the loose flour can easily be pushed from the board. In this manner eight or ten different samples can be placed on the same board by sliding the pressed samples side by side as they are added, always trimming the edges so they will fit snugly together, and taking care to give the same pressure to each sample. After pressing them lightly again with the spatula, taking two or three at a time, and trimming the edges, the samples may be examined for color. A creamy white shade is the best. A dead white, gray or blue indicates overbleaching, inferior wheat of low grade, and a poor quality of gluten. The gray or blue should be specially avoided. If the board is slipped under water, held there for a few seconds, and then placed on a table for a few minutes, approximately the color of the resulting bread will be revealed.

The taste should be sweet and nutty without a suspicion of acidity or must. There should be no disagreeable taste or smell whatsoever.

A strong flour will feel sharp and gritty to the fingers, while a weak flour will feel soft.

2. *Microscopic examination.* This is to detect sprouted wheat, but is certain to show any adulteration by other cereals on account of the characteristic shape and size of the different starch granules. Any undue proportion of bran or any foreign substance can also be detected in this examination.

3. *Moisture determination.* Moisture is determined by weighing about two grams of flour into a small porcelain moisture cup, drying at



212° F. for five hours in a water oven or other oven where the temperature can be controlled, then cooling in a desiccator, and weighing. The loss in weight represents the moisture driven off, from which the percentage can be calculated. See the record card on page 97.

4. *Absorption.* To determine the amount of water the flour will absorb, weigh 34 grams into a coffee cup and run into it from a burette about 18 cc. water at room temperature. Mix this thoroughly, with a stiff table-knife, into a dough and feel lightly with the dry fingers. If the dough does not hold to the fingers, add water, about  $\frac{1}{2}$  cc. at a time, and mix thoroughly until it just comes away without leaving any dough on the fingers. Read the burette and multiply the number of cubic centimeters of water used by 10. Spring wheat or hard winter wheat flour will average about 198 cc. of water to 340 grams of flour, while soft winter wheat flour will average only about 188 cc. of water. The percentage of absorption can thus be calculated. Fill the cup with water and let it stand for about one hour, when it can be used for the gluten test.

The percentage of moisture in flour varies with the kind of wheat, the locality, the rainfall and soil in which grown, etc.; as a rule new wheat will not absorb as much water as old wheat, and the same is true of newly ground flour. Strong wheats take up the most water and retain it during baking, hence yield the most loaves to the barrel. If flour is stored in a dry warm room it dries out very quickly and consequently will absorb more water. If stored in a damp room the reverse is true, as it takes on moisture. Flour should be stored in a dry, cool, and well-lighted and well-ventilated room, never in a cellar or basement or with other articles such as kerosene, coffee, etc., as the odor from them is readily absorbed.

5. *Moist gluten.* In determining this, use the dough left in the cup, by placing it in a piece of linen cloth and tying it up closely. Wash under a tap, using gentle kneading, until all starch is removed as determined by the water running perfectly clear. If no tap is available wash in a basin, changing the water frequently until it is perfectly clear. It is better to do the washing over a screen of bolting cloth or of very fine wire gauze, so as to catch any small particles of gluten which may pass through the cloth and which may be recovered by gently rubbing the ball of gluten over the screen. Remove the gluten from the cloth and dry by squeezing it first in one hand and then in the other, drying the hands with a towel, until the gluten begins to stick to the hand. Weigh the gluten and calculate the percentage of moist gluten.

The gluten to be of good quality must be susceptible of being pulled out into threads or into a thin sheet, be creamy yellow in color, tough and elastic, and of homogeneous texture. A dark, gray, or red gluten, or one spongy in texture, is not of good quality. If it is desired to determine dry gluten, the moist gluten may be placed in a drying oven on a piece of paper capable of resisting heat, or in a glass or porcelain vessel previously weighed, dried to constant weight at  $212^{\circ}$  F., cooled and weighed, the percentage being calculated from the weight of flour originally taken. Wet gluten of good quality when dried will lose about two-thirds of its weight.

6. *The expansion test.* This is another test for gluten, made by weighing out 340 grams of flour and putting about two-thirds of it into the kneader with 12 grams of granulated sugar and 5 grams of salt. Mix 10 grams of a good compressed yeast with it in a cup, add at about  $85^{\circ}$  about one-fourth of the water required as determined by the absorption test, then pour this together with all the water into the kneader, and beat for ten minutes. Pour in the rest of the flour and knead for ten minutes. If the absorption test is correct the dough will leave the kneader without sticking and feel soft in the hands. Place the dough in a glass jar which has a graduate on it (a battery cell is good), press it down level on the top, then place it in the expansion box or other apparatus where the temperature can be maintained at between  $85^{\circ}$  and  $90^{\circ}$ . Note the height to which the dough will rise by placing a small square on the glass door of the expansion box, just in front of the jar. This reading should be made at the end of the first hour and every half hour thereafter until the dough has reached a height of about  $4\frac{1}{2}$  inches, when it should be read every five minutes. The height to which the dough rises, together with the time taken, determines the quality of the gluten.

It is the quality, and not necessarily the quantity of gluten, that produces the largest expansion. Flour containing a very good quality of gluten will rise higher in less time than one containing a large percentage of gluten of poor quality. A strong flour may rise more slowly than a weaker one but will reach a greater maximum height and will remain at this height longer before breaking down. Flour may rise to a good height in a comparatively short time, but unless it has the strength to stand, or goes to pieces when touched, it is not a safe flour for breadmaking. If too little water is used in the dough, it will be too stiff and will not rise so fast, whereas with too much water it will rise too fast, so it is important to get the absorption right.

7. *Baking test.* Prepare the dough as for the expansion test, but instead of putting it in a glass jar mold it into two equal loaves and place in a weighed greased pan, then in the expansion box and let it rise to a gauge on the pan. This requires about one hour and a half. See the record card for data.

If bread is baked too quickly, or in a very hot oven, perhaps at 500°, by the time it is thoroughly baked on the outside the center of the loaf will be spongy. If left in the oven long enough to bake thoroughly all the way through it will bake to a crisp on the surface. If baked at a lower temperature, about 360°, it may be thoroughly baked in the center and at the same time be in good condition on the surface of the loaf, or in other words it will be uniformly baked all the way through. Biscuits, not being so thick, may be baked in a very hot oven, about 500°, as they will bake all the way through before the crust has time to become damaged by the intense heat. Fifteen to twenty minutes is all the time required, depending upon the thickness of the dough and the heat of the oven.

8. *Texture.* The crumb of bread should be full of small, even pores. Large irregular pores are not desirable, but what causes them has not been satisfactorily explained. One good authority states that "these occur in overkneaded or overraised dough," but my experiments do not bear this out. I took two samples of the same flour, used the same ingredients, and treated them alike with the exception of the kneading, one being kneaded twenty minutes and the other one hour. There was a slight difference in texture, but the one kneaded one hour had a better flavor and made a much whiter loaf. Kneading or beating dough is an artificial but harmless process of bleaching. My conclusion is that the more dough is kneaded intelligently the better; the trouble lies in the way kneading is done and not in the time. One cause of large irregular holes is insufficient kneading.

In the home where there is no mechanical kneader available, a very good way to mix dough is to put part of the flour in a crock with all the other ingredients, except the lard, using enough flour to make a batter that can be easily stirred with a big spoon. Stir vigorously for from twelve to fifteen minutes, then stir in more flour, a little at a time. Finish kneading with the hands, sinking all the fingers into the dough, occasionally squeezing the dough to get the flour worked well into it, and taking care to sprinkle only a little flour at a time and not to fold any lumps of flour into the dough. When the dough just sticks to the hands but can be pulled away easily it has

enough flour in it and is ready to be placed in pans when the kneading is finished. When lard is used it may be added after about ten minutes' kneading.

A record card showing data obtained in a recent test of a flour is given below to illustrate the calculations involved.

## RECORD CARD.

Flour No. 50.

Date June 10, 1910.

|             |    |                   |    |
|-------------|----|-------------------|----|
| Color ..... | 10 | Granulation ..... | 10 |
| Odor .....  | 10 | Microscope .....  | 10 |

## MOISTURE.

|                                     | Grams   |
|-------------------------------------|---------|
| Weight of cup and flour .....       | 20.7413 |
| Weight of cup .....                 | 20.0405 |
| Weight of flour .....               | .7008   |
| Weight of cup and flour (dry) ..... | 20.67   |
| Loss .....                          | .0713   |
| Per cent of moisture .....          | 10.1    |

## GLUTEN.

Gluten (moist)

|                |            |
|----------------|------------|
| Grams .....    | 17         |
| Per cent ..... | 50         |
| Quality .....  | excellent. |

105 cc. water to 340 grams flour; put into kneader at 10:00 a. m. Into expansion box at 10:30 a. m.

|                       | Inches |
|-----------------------|--------|
| At 11:30 1 hour ..... | 2      |
| At 1 2½ hours .....   | 4½     |
| 12 1½ hour .....      | 2¾     |
| 1:15 2¾ hour .....    | 5½     |
| 12:30 2 hour .....    | 3¾     |

Put into oven 12:04 p. m. Out 12:54 p. m. Baked 50 minutes at 360° F.

|                               | Grams |
|-------------------------------|-------|
| Weight of pan and dough ..... | 748   |
| Weight of pan .....           | 198   |
| Weight of dough .....         | 550   |
| Weight of pan and dough ..... | 748   |
| Weight of pan and bread ..... | 698   |
| Baked out .....               | 50    |
| Weight of bread .....         | 500   |

## LOAF.

|                 |    |                        |            |
|-----------------|----|------------------------|------------|
| Color .....     | 10 | Texture .....          | 9          |
| Taste .....     | 10 | Volume .....           | 95 cu. in. |
| Odor, hot ..... | 10 | Loaves to barrel ..... | 295        |



To find the number of loaves of bread to the barrel we first complete the weight of the dough from the ingredients used.

*Ingredients Used Per Loaf.*

340 grams flour  
195 cc. water  
12 grams sugar  
10 grams yeast  
5 grams salt

---

562 grams, weight of dough in kneader  
550 grams, weight of dough when taken out

---

12 grams weight of dough left in kneader

From the record card we see that 50 grams of moisture, or one-eleventh, actually baked out of the 550 grams of dough put in the pan. This gives approximately one gram of moisture in the 12 grams of dough left in the kneader, or a total of 51 grams which would have baked out from the entire quantity of dough.

562 grams, weight of dough put in kneader  
51 grams, baked out

---

511 grams weight of loaf if all the dough had been used

The pound loaf weighs 454.5 grams, and a barrel of flour should make 262 such loaves.

$$454.5 : 511 = 262 : x$$

$$x = 295 \text{ loaves to the barrel}$$

In making these tests the importance of absolute accuracy to insure uniform results should be emphasized.

As the different brands of yeast throughout the country vary so much in strength and composition, and as salt, like cold, retards fermentation—depending upon the amount used—it is a difficult matter to say just how much yeast should be used in baking, but the amount required depends mostly upon the time consumed in the baking. Should quick results be desired, make a straight dough, using more yeast as in the formula given above. The amount of yeast given in the following recipe will give good results with a sponge or straight dough where it is set and allowed to rise from eight to ten hours, or over night. One half the amount of yeast, if equal in quality to Fleischmann's compressed yeast, could be used with good results, but would require more time.

*Suggested Recipe for Bread Making.*

|                                  | Grams. | Approximate<br>avoirdupois<br>equivalent. |
|----------------------------------|--------|-------------------------------------------|
| Flour.....                       | 1818   | 4 lbs.                                    |
| Sugar.....                       | 60     | 2 oz.                                     |
| Salt.....                        | 25     | 1 oz.                                     |
| Yeast.....                       | 14     | $\frac{1}{2}$ oz.                         |
| Water (see absorption test)..... | 1060   | 35 oz.                                    |

If sweet milk be substituted for about one-half the amount of water it will greatly improve the bread, or still better use all milk, in which case about one-third of the salt may be omitted. If lard is used, it should not be added until after mixing the dough ten minutes.

It is extremely unsatisfactory to pick up a cook book and read at the bottom of a recipe something like this, "bake in a quick oven," the time required to bake at a given temperature not being stated, when this is one of the most important details in a recipe. I can take almost any quantity of the proper ingredients, treat them as I do common bread, bake properly and get a good wholesome bread, but if I take the best recipe in the world and do not follow it correctly, or do not bake properly, I find it to be impossible to turn out a good loaf. I have known flour made by one miller at one time out of one lot of wheat to be sent to different bakers and to have one baker report that the flour was so poor he could not use it, while others had fine results and asked for more flour of the same kind. Too often is it the case that the fault lies with the baker's not understanding the flour, and not with the flour itself.

I feel that I can not emphasize strongly enough the importance of the art of baking. By referring to the record card it will be seen that our bread is baked 50 minutes at a temperature of 360°F. This, of course, is in a small oven with only one or two loaves at a time. In large ovens where the temperature is not so easy to regulate and where many loaves are put in a pan at the same time it would require a little longer, depending upon the quantity and thickness of the dough which the heat has to penetrate. I hope to live to see the day when the oven in every kitchen in America will be equipped with a thermometer and a heat regulator.

If our enthusiastic twentieth century women want to do something noble, something really worth while, to better themselves and humanity at large, I would like to suggest that they direct their thoughts along this line of work.

| DEPARTMENT

CH

HOUSEHOLD SCIENCE

## THE LEAVENING AGENT IN SALT-RISING BREAD.

WINONA WOODWARD.

*Student Assistant in Home Economics, Bacteriological Laboratory, University of Missouri.*

The question of salt-rising bread fermentation has been studied very little from the laboratory standpoint. In so far as the cause of its rising has been questioned, the explanation has been given that wild yeast falls into the bread from the air while it is being made or that there is such yeast in some of the ingredients used; that is, in the corn meal or in the milk of which the "batter" is made.

Recently Mr. H. A. Kohman, working at the University of Kansas, isolated two organisms from corn meal with which bread can be made to rise. So far as known these have not been identified.

Work along this same line done in the bacteriological laboratory at the University of Missouri this last year, without knowledge of what was being done at the Kansas university, resulted in the isolation of a third organism capable of making bread rise.

Salt-rising bread is usually made by scalding a cup of fresh milk and pouring this over a quarter of a cup of corn meal, two teaspoonfuls of sugar, and one teaspoonful of salt. This is allowed to stand for several hours or over night in a warm place, when it should be light. To this batter warm water is added, one cupful for each loaf of bread desired, and flour to make a drop batter. This is allowed to stand in a warm place until light, then flour is added to make a stiff sponge and made into loaves. The loaves are allowed to rise until double their initial volume, then baked. Quite commonly the milk is not scalded but just warmed, and the sugar is added when making into a drop batter. The important thing is to keep the temperature right.

In taking up the work on salt-rising bread, tests were made to find which ingredient furnished the leavening power. The milk and corn meal used in starting the bread were used in sterile and non-sterile condition and kept at body temperature over night, but only the samples in which non-sterile corn meal was used were light and it was therefore concluded that the corn meal furnishes the leavening agent.

Two organisms were isolated from the corn meal, but only one of these in pure culture would leaven the bread. This organism is a small bacillus and a rapid gas producer. It forms spores which are rather resistant to heat as they are not destroyed by pouring hot milk over the corn meal. The best growth is made at the temperature 38° C.

This organism differs from those described by Mr. Kohman. One described by him is a short rod, which does not form spores and which does not liquefy gelatin. The other is a long rod, which forms spores and liquefies gelatin. The organism isolated at University of Missouri is a very short rod, which forms spores and does not liquefy gelatine.

Bread made with a pure culture of this organism has an odor different that of yeast bread, but not the disagreeable odor so often accompanying salt-rising bread making. This disagreeable odor, which some think is a necessary adjunct of salt-rising bread, is apparently present only when nonsterile milk is used; and generally when the bread is allowed to stand a long time in unfavorable conditions, so that putrefaction changes set in, due very likely to the action of micro-organisms present in the milk or acquired during the bread mixing process. As yet the organism isolated has not been identified with known bacteria, nor has a name been proposed for it.

From the data reported it is apparent that the fermentation occurring in making salt-rising bread may be due to the presence of one or more micro-organisms accidentally present in the corn meal used in making the batter used in starting the bread or introduced in some similar way. The organisms isolated at the University of Kansas and at the University of Missouri were not yeasts (*Saccharomyces*) but belonged to another group of micro-organisms. It is more than likely that other gas-forming organisms will be found which cause the fermentation in salt-rising bread making under home conditions, and it is not unlikely that in many cases two or more such organisms might be present at the same time. Additional study of the matter should be undertaken and it would be interesting to compare the flavor and quality of the bread when different micro-organisms are present.

As more comes to be known of the conditions necessary to the growth of the organisms causing the bread to rise, we can be more sure of success in making it.

A practical deduction from the work reported is that sterilizing the milk before mixing the batter is desirable since more uniform results may then be expected and a product secured which does not have the unpleasant odor often associated with salt-rising bread.



## EDITORIALS.

Was it the longitude of St. Louis that caused the feeling of stability and permanence, of strength and readiness all through the third annual convention? Or was it the new conviction that Home Economics has found itself and is no longer on the edge of things and so looked upon with a sort of distrust?

The practical Middle West has always been hospitable to new measures that promised more comfort and freedom, it has originated plans and adapted ideas. The environment was therefore favorable, but beyond that influence the members showed in many ways that the principles for which the American Home Economics Association stands are accepted as a working platform and that from now on the campaign will be vigorously prosecuted.

Chief among the principles brought out in the meetings was the acquisition of knowledge concerning the articles of daily use, textiles as well as foods, which shall enable purchasers to secure reasonable values for their money. The necessary corollary will be an effort for the cultivation of taste which will make the most of a small income, and for the development of methods in daily management which shall promote the health and efficiency of the members of the family while leaving time for the intellectual needs and pleasures.

In short, the tone of the meeting showed that the authors and listeners alike believed in themselves and in their mission.

The commendation and the help given by members of the other societies was very gratifying and it is hoped that this coöperation will be more and more helpful as time goes on.

With this wider recognition comes upon the Association an added responsibility to "make good."

Your president feels that the future is secure in your hands and that the work will go on and spread very rapidly from this time forward.

—ELLEN H. RICHARDS.

So many of the colleges of agriculture and mechanic arts offer courses in Home Economics that the attempt which is being made to

**Affiliation of  
American  
Agricultural  
Societies.** affiliate a number of the agricultural societies in order that a uniform date and place may be selected for annual meetings is of interest. The need for such affiliation has been recognized for some time and the matter was brought to a head

by the gathering of the many experts in various branches of agriculture at Washington, D. C., the middle of November last. The Association of Agricultural Colleges and Experiment Stations, the Association of Farmers' Institute Workers, and five other agricultural societies, as well as the National Association of State Universities, were in session within the period between November 10-18, and many questions of great interest to students of science and pedagogics were discussed.

In order formally to bring the attention of the various interested societies to the matter a meeting was held of delegates from twelve such societies to consider a plan of affiliation to be submitted as a basis for action. The plan took the form of a constitution which will be submitted to the different societies at their next meetings. The proposed affiliation does not disturb the autonomy of the various societies in any way, but in providing for a central organization it prepares the way for two important measures, namely, a meeting biennially of the various societies at the same time and place so far as this is practicable, and the publication of a scientific journal to meet the common needs of the affiliating societies. Such a journal would naturally serve as a medium for discussion, for reports in abstract of the meetings of the societies, and for notices, reviews, and contributions of general interest in the whole field of agriculture and related science. Each affiliating society would doubtless continue to publish full reports of its meetings and other literature much as at present.

If the plan for this new journal is carried out, it will undoubtedly contain much material of interest to students of Home Economics. As an evidence of this, it may be mentioned that at the recent Washington meetings many papers were presented of which this was true, including among others those presented at the Association of Farmers' Institute Workers by members of the American Home Economics Association.

The April number of the JOURNAL will be a Housewives' Number, with most of its contents of especial interest to the woman in the home.

It will contain among others the following articles: **Future Numbers of the Journal.** The Use of Labor Saving Devices in the Home, by J. Lebowitz; Household Service as a Labor Problem, by J. M. Rubinow; the Social Significance of the Home Economics Movement, by Mrs. Ellen H. Richards; and a number of interesting articles on the care and feeding of children, together with suggestive programs for the club and home.

Of late we have heard much about increased efficiency in business, which is to be brought about by a close study of methods and an introduction of such as shall save the present waste of time and energy of the worker. The bricklayer must lay more bricks in a day and with less fatigue than he lays his present quota; improved ways of using his muscles are to enable the piler of pig iron to double his results and his pay; the railroads, the mines, the machine shops are all urged to increase their output by improved methods. It would seem that these studies are to be made in all departments of practical life, and the household industries will not escape the application of this measuring line that tests efficiency. A beginning we shall try to make in the coming number to show how these principles may be applied to the doing of the daily housework.

The April number will also contain condensed reports from the now rapidly increasing number of state and city organizations of Home Economics and a full account of the important conference on extension work which was a part of the St. Louis meeting. The development of work outside the schools is destined to assume increasing prominence.

The editors wish to make this number of the JOURNAL very helpful to the woman who is chiefly interested in the problems that arise in the daily life of the home and they will welcome articles or suggestions of any kind. Present readers of the JOURNAL should use this opportunity to bring it to the attention of a wider circle.

A special feature of the June number will be the discussion of courses of study, several interesting papers given at the St. Louis Conference being the basis—this will furnish a large amount of suggestive material for the use of teachers in planning for next year. On this line also the editors will welcome the frankest criticism of present methods and suggestions for improvement.

## NEWS FROM THE FIELD.

This school was held January 16-27 at the woman's building. The courses given were as follows:

**School for Housekeepers, University of Illinois.** *The House:* General Work, 8:00 a.m., on the house, Miss Bevier; house planning, Mr. Weaver; applied design in the home, Mr. Kelley; color in the home, Miss Gibbs; fine arts in the home, Professor Lake; plants for the home, Mr. Dorner; landscape gardening, Professor Wyman; good architecture, Professor Ricker. Class Work, 1:00-3:00 p.m., on house planning, Mr. Weaver; applied design in the home, Mr. Kelley; household management, Miss Van Meter; furniture and furnishings, Miss Bevier.

*Foods:* General Work, 8:00-10:00 a.m., the vegetable garden, Professor Lloyd; cuts of meat, Professor Hall. Laboratory work three times in a week in 2 hour periods, covering the selection and preparation of foods, including bread, meat, eggs, milk, cheese, vegetables, etc., Miss Pincomb, Miss Rinaker. Demonstration lessons, 2 hour periods, Mrs. Barlow, Mr. Hepburn. Class Work, pure food, Miss Van Meter; dietaries, 3 lectures, Miss Usher; food for invalids, Mrs. Barlow; jelly making, Dr. Goldthwaite.

*Clothing:* General Work, sewing classes 3 times a week, 2 hour periods, Miss Dickinson, Miss Meadows; two demonstrations, 2 hours each on use of paper patterns and fitting a shirt waist and the hanging of a skirt, Miss Gibbs. Class Work, textiles, 2 lectures, Miss Dickinson.

*Health:* General Work, 8:00-10:00 a.m., public health, 2 lectures, Dr. MacNeal; insects undesirable in the home, Dr. Folsom; gymnasium classes, 3 times a week, 9:00-10:00 a.m., Miss Moulton. Class Work, public health, 2 lectures, Miss Kerr; home nursing, 2 lectures, Miss Balding.

A special evening meeting for the students of the school and their friends, was held January 23, which was addressed by Miss Abby L. Marlatt of the Department of Home Economics, University of Wisconsin.

The course in domestic science was established in the fall of 1909 under Miss Laura Comstock as Assistant Professor. There are two courses offered, one a four year which gives the B.S. degree; the other a two-year course which gives a certificate only. The students entering the four-year course meet the college entrance requirement. We have three in this course and three in the shorter course. Extension work is done in two ways—through a correspondence course in cookery where Williams and Fisher's Elements and Theory and Practice of Cookery is the text book used. Questions are sent out and these are answered by those taking the work; answers are corrected and sent back to writer. Other extension work is done by speaking before women's clubs, granges, etc., throughout the state. There is but one member now on the teaching staff, but next year it is hoped that an assistant may be procured.



The Missouri Home-Makers Conference was organized three years ago under the auspices of the Department of Home Economics of the University of Missouri.

This January the fourth annual meeting was held in Columbia from the 10th to the 13th in connection with the Farmers' Week program.

**Missouri Home-Makers Conference.** Among the subjects presented were the following: What the women of the state can do toward the prevention of infant mortality,

Mrs. W. C. Greene; the problem of dressing the infant, Mrs. Ivy Horner Selvidge; some recent advances in infant feeding, Miss Louise Stanley; a breadmaking demonstration; the curing of ham, Mrs. W. C. Hutcheson; some problems of butter making in the home, Miss Anna Kinney; why butter making in the home is not more successful, Professor C. H. Eckles; the small farm home, Mrs. Wilder; some of the inconveniences of the farm home, Mrs. W. T. Flournoy; planning of a house, Mrs. T. C. Wilson; the bacteriology of cleaning, a demonstration; farm management for women, Miss Hattie Paxton; household management, Mrs. F. B. Mumford; home care of sick, Miss Dora Batson; management of children, Mrs. J. Ed. Hall; adulteration of textiles, Miss Charley Tidd; what the women are doing in Michigan and what Michigan is doing for her women, Miss Jennie Buell; what Missouri is doing for her women, Mrs. W. McNabb Miller; what Missouri should do for her women, Dean Mumford; reports from local home-makers' clubs already organized; plans for further organization, Miss Ilena Bailey; meat cutting demonstration, Professor P. F. Trowbridge; some of the problems of the rural school, Mrs. Marie T. Harvey; relation of home to rural school, Mrs. Cora Chapin; Home Economics in the rural school, Mr. R. H. Emberson; and the problem of getting Home Economics into schools in small towns, Mrs. C. G. Truett. A portable equipment for Domestic Science in rural schools was on exhibition.

In addition to the presentation and discussion of these papers, the following short course was given during the four days:

I. Food Work—1. Preparation of vegetables—Classification, comparative nutritive value, preparation and serving. This included work on fresh vegetables, cereals, and beans, 8-10 every day. Miss Stanley.

2. Cooking of meat—Composition and nutritive value of various cuts of meat, and method of preparation best suited to each with reasons. Opportunity was offered to see an animal cut up, showing wholesale and retail cuts. 2-4 every day. Miss Nesbitt.

II. Sewing—1. Hand work—Simple stitches and general principles of hand sewing. Discussion of when used to best advantage. Making of button holes, etc. 8-10 every day. Miss Humfeld.

2. Machine Work.—Fitting and making of simple waist. 2-4 every day. Miss Humfeld.

III. House Sanitation—A general survey of the principles of house sanitation. Miss Nesbitt. 12-1 every day.

IV. House Decoration—Study of art applied to home. Miss Dobbs. 9-10 every day.

V. Gardening—Professor Whitten.

VI. Butter Making—Professor Eckles.

VII. Poultry Raising.

During the last two sessions of the state legislature, liberal appropriations have been made for the work in Home Science. Two years ago the department moved into new quarters and now occupies the top floor of the new agricultural building, with a floor space 68 x 150 feet. This is divided into 2 laboratories for foods and cookery, 3 sewing rooms, a bed room, 2 class rooms, a dining room, lunch room, reception room and office. Three courses are given, the regular college course, the four year preparatory course and the one year course. Practice teaching is offered for seniors in the college course. The department is in charge of Professor Lilla A. Harkins.

The new Home Economics building for which the last legislature of New York state made an appropriation of \$154,000 is to provide on its first floor an assembly room to seat five or six hundred persons, a reading room, offices and class rooms. One floor is to be devoted to domestic art, and another to domestic science with chemistry and bacteriology laboratories for research work. There will be a small apartment in which the registered students will in turn take charge of the house-keeping and learn to apply principles to every-day life. In the basement will be a cafeteria where students in Home Economics will be trained to feed large numbers, also a laundry where students will learn the technique of handling textiles and managing the industry in a home or community.

The Home Economics department at the present time has a four-year course leading to the degree of the college. With the present year there has been introduced into the course a department of house planning, furnishing and decorating. This is conducted by Mrs. Helen Binkerd Young, a graduate of the Cornell College of Architecture.

According to a note in *Science*, the University of Pittsburgh announces the establishment of four industrial fellowships: No. 1, in the chemistry of baking, yielding \$750 a year for two years, with a cash prize of \$2,000, and Nos. 2, 3 and 4, for an investigation with a view to eliminating or abating the smoke nuisance in large cities, yielding \$2,000, \$1,500 and \$750 per year, respectively, for two years, together with a large additional consideration.

The University of Porto Rico, which is situated at Rio Piedras, offers courses in both domestic science and domestic art. The work in domestic science includes methods of cooking and cookery for the sick and convalescent. Special attention is paid to the preparation of native foods. Lectures and laboratory work are also provided in the course on the chemistry of foods. The students of domestic art study various stitches and their application and the making of undergarments and dressmaking. There is a course in millinery and art needle-work. The university also offers a course in pedagogy.

For the last fifteen years there have been departments of domestic science and domestic art and for years this work has been required of all regular students for two years in each department.

**Winthrop** Recently the state legislature included cooking in its list of subjects which should be taught in the high schools, so that we felt  
**Normal and** that this institution should offer a normal course in domestic science  
**Industrial** which would fit students to go out as teachers. This year we  
**College, Rock** offered such a course, and expect to graduate two from it in June,  
**Hill, S. C.** and several more next year. The normal domestic science course requires four years of work here, much of it the same as that of the other normal causes, with additional courses in home sanitation, advanced cookery, dietary work, laundry work, home nursing, food chemistry, food production and manufacture, and theory and practice of teaching in domestic science. Upon completion of this course the student receives the degree of B. S.

All seniors of the college have practical application of the principles of home-keeping by their residence for a week each time in the Practice Home, to which they go in groups of eight. While there, under the direction of Miss Hyde, they conduct the home and keep exact daily accounts.—MARGARET WHITEMORE, *Teachers College 1907, Head of Domestic Science Department.*

Catharine A. Mulligan of the department of Home Economics writes: "My girls have been experimenting with the soy bean. Our Professor Morgan, head of the agricultural experiment station, has been urging its use both as a crop to enrich the soil and to feed cattle. We cooked the  
**Original** beans as we do navy beans down South, and as Boston baked  
**Work in the** beans, using the fireless cooker for part of the process. We used  
**University of** the meal ground here, containing 20 per cent of fat, and also meal  
**Tennessee.** from Seattle with the oil partly expressed.

"We made muffins and batter cakes and brown bread, using soy bean meal in place of corn meal.

"The meal has 38 per cent of protein in it, so in this day of high priced meat the soy bean is a very satisfactory substitute."

The Housekeeper's Conference, held January 17-28, was designed to aid the women of the state in their household needs. Practical instruction in cooking, sewing, and home nursing was given in the new and completely  
**Housekeep-** equipped laboratories of the woman's building, and ample oppor-  
**ers Confer-** tunity offered for discussion of individual problems.

The general fee for the course was one dollar, the public lectures  
**ence, Agri-** being free. The following subjects were treated:

**cultural Col-** Sewing lessons, by Rhoda B. Cook, on drafting of seven and nine  
**lege of Utah.** gore patterns for skirts, and the making of one woolen skirt.

Home nursing lessons, by Florence M. Brown, Lesson I, the sick room; Lesson II, food for the sick; Lesson III, emergencies.

Cooking Lessons, by Florence I. Dudley, on soups, breads, meat and vegetable cookery.

Public Lectures:—The Simplifying of Housekeeping; A Demonstration of the Cuts of Beef; The Care of Children; The Production of Milk; The Vegetable Garden.



This school is situated at St. Kevin's Park, Kilmacud, Stillorgan, County of Dublin. The grounds include about three acres, including a large fruit and vegetable garden. In addition to the general courses a limited number of **Irish Training School of Domestic Economy.** students are selected each year for training as teachers. For these a course of at least two sessions is given, including the principles of practical elementary science involved in domestic work; cookery; laundry; dressmaking and home sewing; housewifery (including household routine and the keeping of accounts; and practice in the teaching of subjects. Practical instruction in home hygiene and sick nursing is also afforded, and instruction is given in the theory and practice of education.

A most successful conference on school lunches was held by invitation of the Women's Educational and Industrial Union on December 3 in Boston. It was the opinion that such conferences would be a great help to the **Conference on School Lunches.** workers, and it is the intention to have some sort of organization. The many cities represented showed a variety of plans made according to local conditions—most of these have already been described in the *JOURNAL* and others will receive attention later. Most of the cities furnish food on a catering plan with an educational bias, although some have little scientific supervision.

A slightly different idea underlies the furnishing of the 10:30 a.m. glass of milk or sandwich to the anaemic children. In Boston, where ten schools were tried last year, the authorities have authorized opening ten more and have assumed whatever expense for fitting may be needed to a prescribed limit. The masters are coöperating in an efficient manner and with the employment of a school visitor in each district there is reason to believe that the schools will themselves handle such a simple matter as a part of the routine, but that all food served will be paid for even if certain families are aided outside. It is rightly held that it must not be made easy to shift parental responsibility.

Consul-General Richard Guenther of Frankfort, Germany, describes in a recent number of the U. S. Daily Consular and Trade Reports an association of that city for supplying meals and other commodities to its members.

**A Successful German Society for Supplying Food.** This organization, known as the Gesellschaft für Wohlfahrtseinrichtungen, was established on a small scale in 1891 as a joint stock company for the benefit of the poorer and working classes of the population, and has steadily increased and expanded its work. It now maintains eleven restaurants, or eating-rooms, seven canteens (where liquid refreshments and liquors are to be had), four coffee kitchens, one portable kitchen, one store for the sale of various provisions, two buffets or lunch-rooms, and one lecture hall. These institutions are well distributed in places where manufacturing or traffic abounds, also along the harbor and near the railway stations. Last year 475,000 cups of coffee were supplied at 6 pfennings (1.4 cents) a cup, over 500,000 cups of milk at 7 pfennings, and 20,000 cups of cocoa at 10 pfennings.

Last spring the administrative offices were moved into a new building owned by the company, in which are also located lodging rooms for the unmarried workmen, a steam laundry, a bathing hall, and a bakery. The establishment is conducted



strictly according to commercial methods, and its staff includes a general manager, three assistants, and a corps of about 100 cooks, stewards, etc. The sales last year aggregated nearly \$90,000.

A well-cooked and ample dinner, consisting of soup, meat, vegetables, and potatoes is served for 35 pfennigs (8.3 cents). Formerly it cost only 30 pfennigs, but was advanced because of the great increase in the price of foodstuffs. Single portions of meat or vegetables can be had at rates correspondingly low. Sales of lemonade and soda water are on the increase, although a considerable quantity of beer (in bottles) is disposed of. Cheap cigars, cigarettes, and smoking tobacco are also on sale. The price of lodging per week ranges from 38 to 60 cents.

Free libraries and reading rooms are maintained in this and another building of the company. In the city of Offenbach, and in other industrial centers, institutions after the plan of this Frankfort model have been established and confer much benefit on the persons using them.

This congress, held October 5-12, was one of about 70 which formed a feature of the Brussels International Exposition of 1910. Like the first congress, held in Paris, in 1906, it was due to the initiative of the French Société d'Hygiène Alimentaire.

**Second International Congress on Alimentary Hygiene and Rational Nutrition of Man.** The Brussels congress was divided into seven sections, namely: (1) biological physics and energetics; (2) physiology and physiological chemistry—rational nutrition and dietetics; (3) hygiene of nutrition, bacteriology, and parasitology—food poisoning; (4) food materials—their composition, analysis, and adulteration, with subsections on general food materials and on dairy products; (5) potable waters; (6) legislation, inspection, suppression of fraud, statistics of food adulteration; and (7) teaching of rational nutrition and hygiene—methods of popular instruction in the subject, coöperative work, administration of food work, food charity work, and food in relation to sociological questions.

The congress was called under the patronage of the King of Belgium and the Belgian Government, and numbered among its officials many men of prominence. Its sessions, as of other congresses at the Brussels Exposition, were held in the Palais des Fêtes. The attendance was large, particularly the representation from various European countries. Dr. H. W. Wiley acted as chairman of the American committee, and Dr. C. F. Langworthy as chairman of the American sub-committee on section 1.

The principal activities of the congress centered in the section meetings and the general conferences, both of which were of great interest. The plan was followed of printing and distributing the papers in advance, with a view to economizing time, as an author could then simply summarize his paper and present his results for discussion. The plan adopted permitted the greatest possible amount of discussion and interchange of information in a given time. In many cases recommendations were adopted regarding future work having to do with the subjects presented.

Much interest was manifested in the energetics of nutrition, and the papers in section 1, which had to do with this subject, were particularly numerous. The interest in questions of hygiene was shown by the able papers in section 3, which

included such topics as the danger of exposing foods for sale without due protection from dust and dirt, physical methods for preserving food, including sterilization and refrigeration, food poisoning of different types, chemical and bacteriological requirements for potable waters, and the prevention of tuberculosis infection through milk. Other papers which had to do with milk and dairy products formed a part of the list presented in section 4.

The list of papers in section 7, likewise a long one, treated of such subjects as the feeding of infants, the food of laboring men, diet in different climates, army diet, and diet in rural regions. The educational side of the work was also strongly emphasized in this section with papers on the teaching of nutrition in schools, the methods followed in Holland in popularizing work in rational nutrition and hygiene, and the methods of teaching Home Economics followed in a number of American colleges.

In view of the interest and activity in human nutrition in this country, it seemed desirable that the American work along these lines should be adequately represented at the Brussels congress, and an effort was accordingly made by Dr. Langworthy to collect papers and other illustrative material. The response from the teachers, investigators, and others concerned was quite general, although the time was short. Some thirty papers were received from the landgrant institutions, other colleges, normal schools, etc., in the United States, which give domestic science courses.

The following is a partial list: Course in Domestic Science, Domestic Science Division, School of Agriculture, University of Minnesota, Juniata L. Shepperd; The Department of Home Economics, University of Wisconsin, and Its Work, Abby L. Marlatt; Research Work in the Domestic Science Division, College of Agriculture, University of Minnesota—papers by Florence Gaumnitz and Mary L. Bull; Outline of Course in Domestic Science, College of Agriculture, University of Minnesota, Martha B. Moorhead; The Feeding of School Children, Caroline L. Hunt; The American Home Economics Association and Its Work, Benjamin R. Andrews; The Respiration Calorimeter at the Institute of Animal Nutrition of the Pennsylvania State College, H. P. Armsby; The Bomb Calorimeter, Methods of Standardization, Choice of a Standard Calorimetric Substance, and the Use of a Variable Water Equivalent, J. A. Fries; The Influence of Type and of Age Upon the Utilization of Feed by Cattle. Investigations at the Institute of Animal Nutrition, Pennsylvania State College, H. P. Armsby and J. A. Fries; Description of the Improved Respiration Calorimeter Installed at the Office of Experiment Stations in the Department of Agriculture, and a Statement of the Work Which is Being Undertaken With It, C. F. Langworthy and R. D. Milner; Progress Report of Investigations in Human Nutrition in the United States, in 1906-1910, C. F. Langworthy; The Relative Ease of Digestion of Cheese as Compared with Beef, C. F. Langworthy and R. D. Milner; Technical Reports, Popular Bulletins, and other Nutrition Publications of the Office of Experiment Stations, C. F. Langworthy; The Origin and Development of the Nutrition Investigations of the Office of Experiment Stations, U. S. Department of Agriculture, C. F. Langworthy; Prevention of Tuberculosis Infection Through Milk, M. P. Ravenel; The Working Man's Food in New York and Popularizing Instruction in Rational Feeding, Winifred S. Gibbs; Notes Describing Briefly the Work That is Being Accomplished in This Country Along the Lines Outlined in Section 7, Ellen H. Richards; and Dietary for One Week for a Family of Five at a Cost of Five Dollars, Electra H. Cobb, Alice V. Gould, Bertha M. Nutting, and Allae C. Slater, Rhode Island State College.

## BOOKS AND LITERATURE.

**Report of the [Massachusetts] Commission on the Cost of Living.** R. Luce et al. Boston, Mass. State. House Rpt. No. 1750, 1910, pp. 752.

This volume contains a mass of data relative to the cost of living, as gathered by the Massachusetts State Commission in 1910, and deserves the attention of all students of Home Economics. Its scope may be indicated by its section headings of price statistics, wages and hours of labor, chief items of expenditure, general analysis and classification of these items, social wastage, individual wastage, changes in supply, changes in demand, changes in value of money, effects of increase of cost of living and conclusions. There is also an appendix discussing public markets in Boston; family budgets; waste of health; Massachusetts farm produce; current explanations of high prices; prices of trust-controlled commodities; statistics of crime, pauperism, and insanity, agriculture in Massachusetts, meat supply, and markets; articles purchased in Boston and reweighed and measured by the State Department of Weights and Measures; savings and cooperative banks; and comparative expenditures at state institutions.

The findings of the commission with regard to the causes of the recent advance of prices are that the primary world-wide cause is the increase of the gold supply. In the United States it has been greatly accelerated by an enormous waste of income "through uneconomic expenditures for war and national armament and through multiple forms of extravagance, both public and private, and of wastage, both individual and social." It has been further promoted by factors affecting production and consumption, such as the drain of population from the land to add to the non-producing food consumers of cities; uneconomic methods of production and distribution; and the increase in the standard of living coupled with a national tendency to extravagance. The tariff, trusts, and labor unions are not regarded as direct and active causes.

Among the recommendations for legislation are the establishment of a commission of commerce, before which citizens may lay complaints of injustice; a commission on market improvements; the enactment of a law requiring packages of food products to be labelled as the net weight or volume of their contents; the better inspection of cold storage plants; and an improvement in the methods of gathering statistics.

**Wage Earning Women.** Annie Marion McLean. MacMillan Co., New York. 1910. Pp. 202. Price \$1.25.

This is a study based on the work of some twenty investigators who made detailed studies of women in the industries of New England, New York City, New Jersey, Pennsylvania, the Middle West including Chicago, and the Far West. The book is descriptive of conditions as they may be observed by one going into the shops



and mills. It is further a very readable volume, vivid with detail. The study was made under the auspices of the National Board of the Y. W. C. A., and Miss Grace H. Dodge of the Board contributes an introductory word. The last two chapters deal with Uplifting Forces and Suggestions for Improvement.—B. R. A.

**A Manual of Personal Hygiene.** Proper Living upon a Physiologic Basis. By Eminent Specialists. Edited by Walter L. Pyle, M.D. Fourth Revised Edition, 12mo. of 472 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1910. \$1.50.

This is a revised edition of a standard text book.

**The Practical Teaching of Housewifery to Girls in the Elementary Schools.** Lucy A. Crass (*Pub. Health* [London], 24 (1910), No. 1, pp. 6-10, figs. 4).

The main purpose of this article is to describe the practical way in which the teaching of housekeeping is being conducted in Manchester, England.

Good provision for the teaching of cooking and laundering is found in over 50 centers, and more than 30 special teachers are employed in teaching these subjects to girls over 11 years of age. Special courses in the feeding and care of infants are given by 2 specially qualified teachers to the girls in grade 5 and above. The housekeeping instruction is not given in the schools but in cottages of the type lived in by most of the children attending the centers. These cottages are tastefully but simply furnished, and are equipped with suitable but not elaborate cooking and laundering appliances. The teacher lives at the center. Each course extends through 7 or 8 weeks and the pupils attend for the whole of the ordinary school hours during this period. By this continuous term of instruction girls can get a much more comprehensive view and a much better grasp of the subject of household management than is possible when isolated lessons are given. Twelve girls attend at one time.

In addition to the practical instruction in housekeeping, sewing, cooking, and laundering, lectures are given by the teacher on 2 or 3 afternoons of the week on such subjects as the choice of a house, ventilation, drainage, division of income, household accounts, management and care of household linen, choice of food, clothes, etc. A fully qualified nurse comes to the center one afternoon each week and lectures on the care and feeding of infants, and under her superintendence the girls bathe, dress, and tend a real live baby loaned for the purpose. The general plan of the week's work is outlined. The work is divided into three sections, namely, cooking, laundering, and housekeeping, and the pupils are also divided into three groups of four girls each, each being responsible for one section of the work for a week at a time, taking each section in rotation.

**Back Numbers Wanted of the Journal of Home Economics.**

The editors repeat their request for Nos. 1 and 2 of Volume I, and No. 1 of Volume II. Forty cents will be paid for each number in cash or in credit on subscription.





# THE Journal of Home Economics

Vol. III

JUNE, 1911

No. 3

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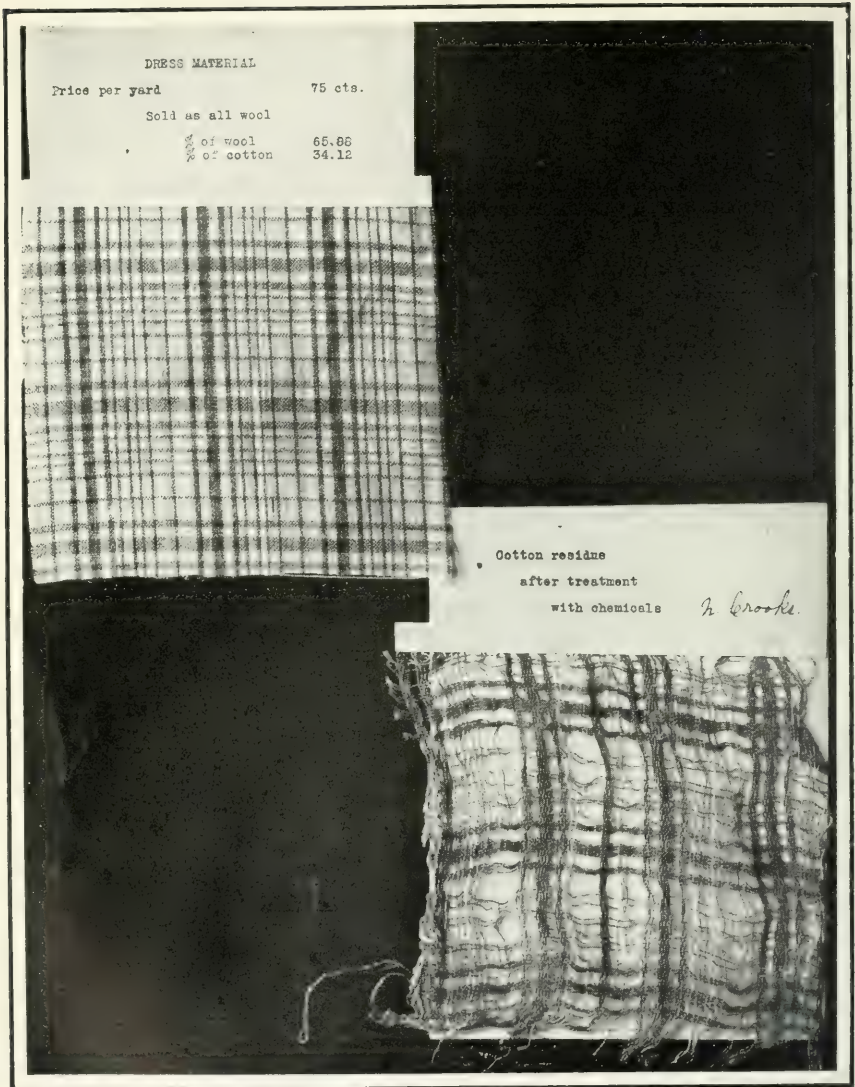
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An "All-Wool" Dress Material, showing upon Test 34.12 Per Cent  
of Cotton. (See Page 222.)

# THE Journal of Home Economics

VOL. III.

JUNE, 1911

No. 3

## THE DEATH OF MRS. ELLEN H. RICHARDS.

Mrs. Ellen H. Richards, former president of the American Home Economics Association, died at her home, 32 Eliot St., Jamaica Plain, Massachusetts, on March 30 after a week's illness. On the 23d she was stricken with angina pectoris, a disease of which she had formerly had lighter attacks. She rallied, and for a few days there was hope of her recovery. On the 24th she even put the final touches to a paper which she was to read at the Congress of Technology to be held the second week of April. But a relapse soon followed and after a short period of unconsciousness on the 30th she died peacefully.

The funeral services were held April 2 in Trinity Church, Boston.

Mrs. Richards was born in Dunstable, Massachusetts, December 3, 1842, the daughter of Peter G. and Fannie Swallow. She graduated from Vassar College in 1870 and three years later was given the degree of M. A. from that college and of B. S. from the Institute of Technology. She was in that year appointed instructor in sanitary chemistry in the Women's Laboratory of the Institute and later was given the chair of sanitary chemistry which she held until her death.

In 1875 she married Prof. Robert H. Richards of the Massachusetts Institute of Technology.

A life of Mrs. Richards is to be written with the approval of Professor Richards. It is hoped that the story of her life may be of such a character that it will not only interest those who have known Mrs. Richards either personally or through her work but will also serve to extend her influence and to inspire future workers. Any material such as letters, photographs, characteristic sayings, and incidents which will help to show her personality and her far-reaching interests and activities will be very valuable to the editor, Miss Caroline L. Hunt, and should be sent to her at 32 Eliot Street, Jamaica Plain, Massachusetts.



## MRS. RICHARDS' RELATION TO THE HOME ECONOMICS MOVEMENT.

ISABEL BEVIER.

*Professor of Household Science, University of Illinois, and President American Home Economics Association.*

We stand too much in the shadow of our great loss, too near to the results of Mrs. Richards' life, to form any adequate judgment of the countless ways in which she has influenced the Home Economics movement. Those at all familiar with the movement know that she has been for twenty-five years its prophet, its interpreter, its conservator, its inspirer, and to use her own word, its engineer.

As long ago as 1889 she was pleading for "domestic economy as a factor in public education." When Home Economics had no name and no place in the thought or plans of either philanthropists or educators, Mrs. Richards was working for it through the Collegiate Alumnae, the New England Kitchen, through sanitary chemistry, with individuals in their special problems, with groups of adventurous spirits seeking more light on the common daily tasks. Perhaps no one has ever served any cause through so many different channels.

In her were combined to an unusual degree the vision of the prophet with the constructive power of the engineer. Her visions must be wrought into deeds, and then she moved on quickly to a new vision. There comes to mind a remark she made to me once about a piece of work, "No use in doing that any more. You know how, go on to something new." It was the habit of her life to fashion old truths into new forms, to keep pace with the wheels of progress.

As an interpreter of Home Economics she has had no equal. To the scientist and sanitarian she could present its scientific and sanitary aspects; the next moment she could show the society leader its social significance, and then turn to the manager of the lunch room and the teacher and explain how they, each in their own way, could promote its interests. A glance at her published works shows the breadth of her view and her firm grasp on the essential principles of the Art of Right Living of which she spoke and wrote so often.

Mrs. Richards was so preëminently the moving spirit in so many enterprises that one forgets sometimes how much the world owes to her as a conservator, as well as an originator, of much that is best in our ideals of home and family life. The debt which Home Economics owes to her in this respect is a very large one. A self-seeking woman of narrow sympathies would have wrecked it many times, but her sanity, her sense of humor, her power of silence, her tolerance, her resourcefulness, and her discrimination made her its great conservator. No fads or fancies clouded her clear vision of essentials and non-essentials. Some of the last words she wrote show best her method.

Have faith in the working out of the destiny of the race; be ready to accept the unaccustomed, to use the radium of social progress to cure the ulcers of the old friction. What if a few mistakes are made? How else shall the truth be learned? Try all things and hold fast that which is good.

Because she had this faith, this willingness to accept the unaccustomed, this ability to hold fast to the good, people trusted her judgment, followed her lead, even though they had not seen her vision. Her counsel has been sought by workers in every phase of the movement and from every part of the United States. Resourceful, alert, with unflagging energy and unbounded generosity, she could be depended upon to give something adapted to the particular need of each person or undertaking, could counsel how to avoid the rocks and pitfalls, and where, "having done all, *to stand.*" In this sense she has served for many years as consulting engineer to the Home Economics movement. It is safe to say no university department has been organized, no important step taken, in which her ideas and her counsels have not had a part.

No more signal proof of her wise leadership is found than in the way in which she cherished and developed this unknown movement until it made for itself a place in the councils of our foremost educational organization, the National Education Association. There must have been a peculiar pleasure to her, as there was an evident appropriateness, in the request that she take her place in the Council of the N. E. A. and represent Home Economics. Then she could say, as she did at the Boston Meeting of the American Home Economics Association,

To us to-day, is given to see the tree of our nurture with its roots firmly planted and branches spreading from sea to sea. The seed of it was planted many years ago and has many times been dug up to see if life existed. Home Economics,

the preservation of the home and the economics of living, occupy a large space in the transactions of societies and even in the daily press.

Better yet than all these tangible results of her numerous and varied activities, greater even than her power of initiative, was her power to inspire, to give fresh courage and new hope to those who had grown discouraged by the hardships of the way. Only those who have felt that healing touch and who have gone from her with a new vision of service realize the greatness of our loss. Only she could have said, as she did at the close of a busy week at the Boston Convention, these characteristic words which must ever serve as a watch-word as well as a benediction:

The word I wish to leave with you is Courage—Faith in the evolution of the race—Progress by the very means which seem at first sight to destroy all cherished ideals.

### IN MEMORIAM: ELLEN H. RICHARDS.

*A voice is hushed:* but ere it failed,  
The listening echoes caught its tone,  
And now its message clear and keen  
On every wind of heaven is blown.

*A staff is broke:* but ere it snapped,  
Those who had leaned on it so long  
Had made its steadfast fibre theirs,  
And fare now forward, straight and strong.

*A light is quenched:* but ere it paled,  
It lit a hundred torches' flame,  
That shine across the darkening sky,  
And star with gold one honored name.

LAURA E. RICHARDS.

April, 1911.

## A STUDY OF THE SUBJECT OF TEXTILES AS IT IS PRESENTED IN HIGHER INSTITUTIONS.

ABBY L. MARLATT.

*Professor of Home Economics, University of Wisconsin.*

With a view to obtaining data as to the status of the teaching of textiles, letters were sent to the leading colleges and universities in this country asking what was presented under this title, first as to subject matter and second as to laboratory work. Replies were received from some thirty institutions, including technical institutions, colleges, and universities, situated from Maine to the Hawaiian Islands.

The results showed a very great difference in the standards as far as prerequisites, character and extent of work, and credits granted for graduation were concerned. Three required the student to take courses only in art and design; two required courses in chemistry as prerequisites; four required courses in the general subject of sewing for which no credit was given towards graduation; three institutions granted four credits in this subject; eight gave only laboratory work in the study of textiles; nine gave laboratory work in the design of costumes; two gave laboratory work in dyeing; four gave no work in textiles; two gave full work in textiles, and two gave full work in applied art; six reported no work in applied art; botany was a prerequisite in one institution; nineteen gave courses in applied art.

There seems to be a very wide latitude concerning the subject of the definition of a course in textiles. Varying with the institution, it seems to cover the study of textile fibres, their manufacture, chemical composition, adulteration, and hygienic value, through every phase of the clothing industry and the arts and crafts movement. One institution reports that under the name of textiles they give "sewing, handwork, often modelwork, with a few vague textile lectures." One writes that the students prepare essays on the four fibres, while one of our most prominent professional schools for women states that they give nothing under the name of textiles. The following outline represents in tabulated form the subject matter which is presented in the various institutions under this title. Only two, as previously stated, give all of this work.



## TEXTILES: SUBJECT MATIER.

## Phases:

- I. Historic: Evolution of Industry—Processes (lecture):
  - (A) Spinning.
  - (B) Weaving.
  - (C) Design (printing).
  - (D) Color in fabrics (dyeing).
  - (E) Bleaching.
- II. Economic Conditions (lectures):
  - (A) Home industries.
  - (B) Rise of factory system.
  - (C) Effect on woman as wage earner.
- III. Modern Conditions:—
  - (A) Study of fibres used today:
    - (1) Distribution.
    - (2) Cultivation and varieties.
    - (3) Treatment in factory:—
      - (a) Bleaching.
      - (b) Dyeing.
      - (c) Adulteration.
  - (B) Characteristic of each fibre (lectures and laboratory work):
    - (1) Structure under the microscope.
    - (2) Chemical nature.
    - (3) Effect of chemicals on fibre:—
      - (a) Acids.
      - (b) Alkalies.
      - (c) Metallic salts.
      - (d) Bleaching powders.
      - (e) Dyes:—
        - I. Kinds:—Acid, basic, substantive, mordants, vegetable dyes, mineral dyes.
        - II. Testing fastness to perspiration, water, washing, crocking, fat solvents.
    - (4) Elasticity and tensile strength:—
      - (a) Native.
      - (b) As affected by manufacture.
      - (c) As affected by laundry processes.
    - (5) Hygroscopicity.
    - (6) Tests for adulteration.
  - (C) Study of fabrics:—Fibre, weave, dye, adulteration.
  - (D) Value of each fabric for use in clothing:
    - (1) Air retention.
    - (2) Water retention.
    - (3) Shrinkage in wearing and washing.
    - (4) Wearing or lasting quality.
    - (5) Relative cost.

## (E) Historic use of fabrics for protection and ornament (lectures):

- (1) Beautiful fabrics of history:—
  - (a) Design and color.
  - (b) Use in dress and house decoration.
- (2) History of costume:—
  - (a) Evolution of dress.
  - (b) Cyclic character of fashion.
  - (c) Economic and industrial phases of fashion change.

## IV. Selection and Manufacture of Clothing:

(laboratory work)

## (A) Manufacture of clothing:—

- (1) Ready to wear clothing 

|   |                    |
|---|--------------------|
| { | Factory system.    |
| { | Sweat shop system. |
| { | Consumer's league. |
| { | Child labor laws.  |
- (2) Home made clothing.
- (3) Modiste or tailor made clothing.

## (B) Relative cost of home made, tailor made, and ready to wear clothing.

## (C) Cost of clothing for a year:

- (1) Low.
- (2) Medium.
- (3) Luxury.

## (D) Design applied to dress (lectures):—

- (1) Measure harmony:—
  - (a) In human figure.
  - (b) In parts of garments.
  - (c) Between parts of costume.
- (2) Essentials of a beautiful gown:—
  - (a) Proportion and line.
  - (b) Beauty of material.
  - (c) Excellence of workmanship.
- (3) Appropriateness in gowns:—
  - (a) Suited to individuality (should express the wearer).
  - (b) Suited to color of hair, eyes, skin, etc.
  - (c) Suited to the occasion.
- (4) Designing of costumes (laboratory work).

## V. Arts and Crafts Movement:—

- (A) Design for weaving, stenciling, block printing on useful articles.
- (B) Practice in weaving, stenciling, block printing.
- (C) Practice in dyeing:—
  - (1) One color.
  - (2) Tied design.
  - (3) Batiek.
  - (4) Bleaching designs.

Under the term "applied art" the following work is offered in some of the institutions: Weaving, basketry, stenciling, block printing, dyeing, embroidering, lace making, crocheting, knitting, netting, hand sewing, modeling, pottery, leather work, hammered work in metal, enameling, jewelry, bookbinding, and house decoration. Some of these subjects were offered under the name of "domestic art," some were offered under the name of "applied art" in the art department, and some were offered under the name of "manual training." Many of them were seemingly given without any definite previous training in design.

If we as instructors are to help in raising the art appreciation of the educated people of the country, we must insist that there shall not only be lectures on the historic phases of art, but also laboratory courses in design preceding any application of design in textile work or house decoration. There should be courses offered in experimental psychology which will make the laws of beauty more nearly clear. Such courses will emphasize the value of line and space relation and color, and change the teaching from arbitrary statements, showing the individual preference of the lecturer, to the presentation of the fundamental principles which underlie all appreciation of beauty.

The following recommendation as to prerequisites and general subjects for lecture and laboratory work is presented with the idea that it will at least give a basis for more nearly uniform work to be presented under the name of "textiles."

Prerequisites required:

Art and design, chemistry.

Additional prerequisites suggested:—

Botany, economics, sewing (without college credit).

Lecture work:—

Historical, economic, chemical, hygienic, artistic study of textiles.

Laboratory work in textiles:—

Microscopic examinations.

Chemical tests for composition and adulterations.

Reaction to acids, alkalies, salts, and dyes in the processes of manufacture.

Study of dyes in their effect upon textile fibres.

Study of laundry problems as they affect the various textiles.

Study of hygienic problems under the headings of air retention, moisture retention, and heat retention.

Effect of the color of the fabric upon the individual.

Study of artistic problems under the subject of applied design in weaving, stenciling, block printing, and dyeing.

The following is suggested as a sequence course in textiles and applied art:

- I. Art and Design:  
Lecture and laboratory work offering at least 3 credits toward graduation.
- II. Textiles:  
Lecture and laboratory work offering at least 4 credits toward graduation.
- III. Manufacture and Selection of Clothing.  
Lecture and laboratory work offering at least 5 credits toward graduation.
- IV. House Decoration:  
Lecture and laboratory work offering at least 4 credits toward graduation.
- V. Household Management:
  - (1) Purchase of material.
  - (2) Cleaning of material.
  - (3) Preservation of material.Lecture and laboratory work offering at least 3 credits toward graduation.

The subject of theses in textile study and applied art in textiles is one that should be developed much more than it is. The field is comparatively unworked, in fact it is very difficult to find definite and authoritative material except in very technical form in print to-day. The undergraduate thesis may well include experimentation along the line of composition, adulteration, and economic problems.

The following theses are reported from the various institutions:

**Ohio State University:—**

- (1) Study of Standard Wool and Silk Fabrics.
- (2) Furnishing a Given Home on a Small Amount of Money: (a) in Good Taste, (b) in Bad Taste.

**South Dakota State College:**

- (1) Selection and Cost of House Furnishing under Specified Conditions.

**University of Wisconsin:**

- (1) Adulterations in Silk Fabrics Found in the Open Market.
- (2) Effect of Washing Compounds on Tensile Strength of Cotton and Linen Fabrics—A Study in Methods.
- (3) The Effect upon the Ultimate Consumer of the Present Schedule "K" (Tariff on Wool).

If the various universities and colleges unite in doing research work along the lines blazed by Miss Nellie Crooks while studying at Teachers College, we shall have eventually a body of knowledge that will be of benefit not only to the teaching profession, but to everyone. The textile problem requires as much study and unfortunately as much legislation as does the pure food problem. The Home Economics departments are in a position to aid very materially in this work.



## THE CONTENT OF A COLLEGE COURSE IN TEXTILES FOR THE TRAINING OF TEACHERS, AND ITS APPLICATION IN THE LOWER SCHOOLS.<sup>1</sup>

NELLIE CROOKS.

*Milwaukee-Downer College.*

Much of the teaching of domestic art in elementary and high schools has for a long time been narrow and formal. This condition has been largely due to the teacher's lack of knowledge of the principles that underlie the work. In many of the courses for the training of teachers in domestic art, perfection in technique is considered the only thing of value. For this reason technical skill has been demanded of the pupils. Yet the fact that children as well as adults are consumers makes a necessity of teaching standards of living and the spending of money in the grades and high schools as well as in the colleges. These, when taught with the lessons in domestic art, give the whole subject a broader and more living value. The study of the subject of textiles should supply a large part of the thought content of all this work.

As I have studied the catalogs of colleges, high schools and elementary schools, I have found many and various activities included under the word "textiles." The study of fabrics, the cost of materials, sewing, dress-making, millinery, basketry, all are included under the magic word. A course in textiles has been used to cover such a large and indefinite field of instruction that it is difficult to tell what really is included in the subject. I shall use the term to include the study of all fibres and woven goods produced from them, considered from the point of view of the consumer.

The object of a course in textiles for teachers should be to give a basis for constructive work in domestic art in the elementary and

<sup>1</sup>Presented at the St. Louis Meeting of the American Home Economics Association, December, 1910. The tests shown in the illustrations were made at Teachers College, Columbia University, by Miss Crooks. Illustrations reproduced from *Harper's Weekly* by permission.

secondary schools, not for the training of any individual artistic gifts. The latter, to be sure, has its place, but it belongs to the study of arts and crafts, rather than in a course in textiles. Many courses place so much emphasis on the purely artistic and mechanical side of the work that the student gets no grasp of the subject as a whole. Some knowledge of weaving is necessary, but hours spent in weaving intricate patterns can give only mechanical skill, and unless followed by study of fibre and materials are not sufficient to train the teacher for her future work. The same is true of extensive work in dyeing. Unless the student can study the dyes as to fastness to light, durability, and their other economic values, the result of the work has artistic value only. The teacher must have a comprehensive knowledge of the raw fibres and the processes used in making fabrics in order to be able to judge the finished product. Is it not time that we consider true thrift consists in spending wisely as well as in saving? Women are the spenders of money, yet how little is taught of the relative values of materials or of the condition of labor for which they are responsible by their demand for cheap showy goods.

The study of textiles should be used as a basis for all the work in domestic arts that is included under the terms sewing, millinery, and dress-making. These subjects should teach the application of all textile principles, but they usually deal only with the manipulation of material. I hope to show that the study of textiles itself has enough scientific and economic basis to be not an adjunct but a fundamental part of Home Economics and that the subject matter can not be furnished by any other study. Let us consider: (1) The content of a course in textiles in college, and the fundamental principles and standards that should be expected in a teacher of these subjects in the lower schools; (2) the application of these facts and principles to courses in the lower schools.

Certain pre-requisites are required for this college course. There should be a year of practical work in chemistry and enough history to furnish a background. A course in economics should if possible precede or accompany it.

The field is so vast that in every college course some one phase of the work is especially emphasized. For convenience we may divide the study of textiles into the following four groups: (1) Historic, (2) artistic, (3) hygienic, (4) economic. In the early part of the college work which I shall try to outline, economic principles are emphasized both in the reference reading and the experimental work. We

begin by tracing the industries from primitive conditions, and the development of civilization as expressed by hand work. This we find illustrated by the rude shelter of woven branches which was the beginning of weaving, and the struggle of primitive people to obtain the necessities of life, as food, shelter, and clothing. We trace briefly the evolution of the home; the change from a wandering to a settled life as it affected the lives of women; the gradual progress of the industries and the change this made in the life of the people; and the development of the loom and the materials that were first used for clothing. While we study the place of woman in early civilization and her struggle with adverse circumstances, we try before we complete this part of the work to bury the primitive woman, that specter that has haunted Home Economics for so many years.

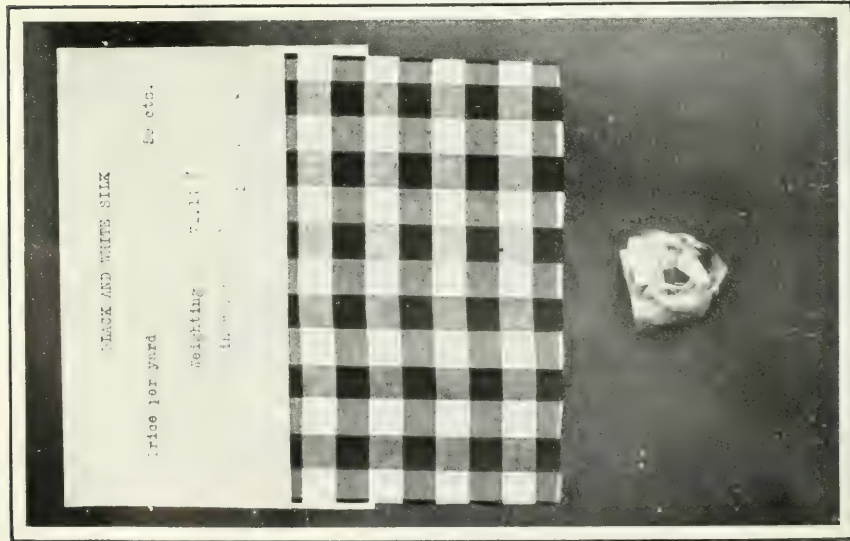
We trace the evolution of the industries through trade and barter; the differentiation of producer and consumer; the corresponding distribution and localization of different trades and industries; and the organization of the industries through the guilds. Parallel with this is the development of the life of women and children in the home. We include also the economic independence of isolated people, such as the American colonists, and the larger significance of the fact even in so political a matter as the American Revolution. To illustrate this point we have only to remember the influence of the ability of women to spin and weave in colonial times. This enabled them at the time of the Revolution to supply the pressing needs of the army. The well known account of the woman and her daughter in Massachusetts, who in twenty-four hours sheared a sheep, washed, spun, and wove the wool, and made a suit of clothes for the boy to wear to fight for liberty, illustrates this point.

The course also includes the industrial revolution, as brought about by inventions; the economic changes, notably the transfer of women's work from the home to the factory; and the textile inventions that were largely instrumental in bringing about this change and the establishment of the factory system. The lives of the inventors furnish much that will be of interest later.

Turning now from the evolution of the household industries to the raw material, we come to the general classification of fibres used in the textile industry. These group themselves under the heads of animal, vegetable, mineral, and artificial fibres. These classes are distinguished first by chemical and microscopic tests and their general characteristics noted. We then take up the separate study of wool,

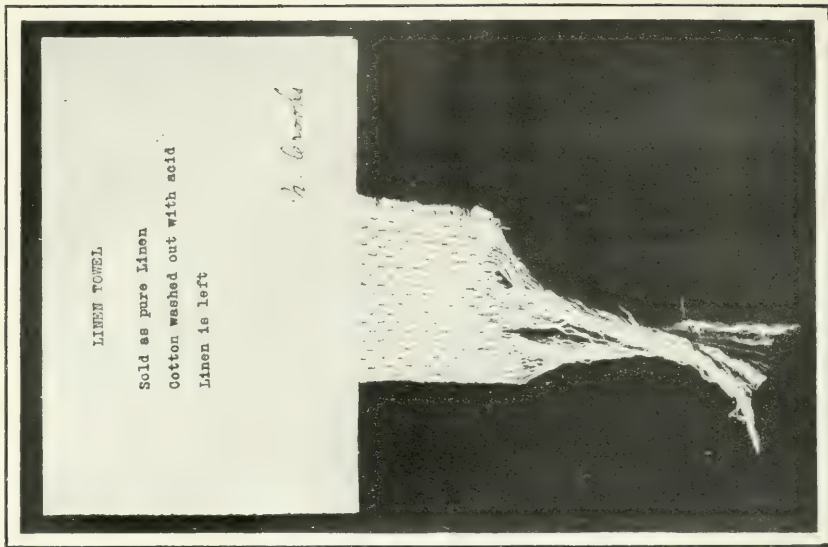






From "Harper's Weekly,"  
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"Silk" Goods with 77 1/2 Per Cent of Weighting.



From "Harper's Weekly,"  
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A "Linen" Towel, Tested to Show the Presence of Cotton.

silk, cotton, and flax. In order to illustrate we will consider a few of the points taken up in the study of wool.

The chemical and microscopic study of wool is more intensive, for the aim is to make the work an accurate basis for future tests in cloth adulteration. When I first took up the work in adulteration in textiles few books were written on the subject, but now there are a number of works that the student can consult. But care and time is necessary in the laboratory work to obtain results that will be of any value. We study different kinds of wool and hair in order to distinguish perfect and imperfect fibres. The consumer who believes he is receiving all wool when he makes his purchase needs to be convinced by actual tests that it is possible that his purchase, in spite of a fair exterior, may contain only a small percentage of wool. To show this, accurate and exact knowledge of the fibres must be obtained by the student in the laboratory.

The study of the manufacture of wool and worsted goods in colonial times is made a basis for the study of factory-made materials. Intricate problems of machinery are not entered into but only touched on. Mills are visited and the principal processes of making the yarn and weaving are observed and afterwards discussed in class. Simple checks, stripes and twills are designed and woven by the students.

Having gained this knowledge of the manufacture of wool materials, the student has a foundation for judging different qualities of materials. In order to know more fully what constitute good materials and to be able to judge by sight and touch, comparisons are made and judgments formed which will be of value when shopping.

The tests are divided into two general classes, those that can be used when shopping and those that have to be made at home or in the laboratory. In order to aid the future shopper, yard pieces of a great variety of wool and worsted goods are seen and handled, for example serges from 75 cents to \$2.50 a yard, broadcloths, and cheviots, of different prices and of foreign and domestic make. Small samples are of little use in this work, as the pieces must be sufficiently large for the student to get the "feel" of the goods.

The difference between linen and cotton is always difficult to determine. A few of the simple tests are: (1) Tearing the material and comparing the frayed edges; (2) burning the threads, reducing them to ashes and comparing the results; (3) using ink, in which a difference of capillary attraction is noted, due to the wax having been removed from the cotton, and the fibrous structure of flax; and (4) applying

glycerin, when the cotton remains opaque and the linen becomes translucent.

The laboratory tests of woven goods may be as various as time permits, embracing tests for durability, dyes and analysis of all kinds of woollen fabrics, with as much quantitative work as desired. As silk is the most expensive raw fibre it is more subject to adulteration than any other. The most common methods are to mix it with cotton or ramie and actually to weight the silk threads with sugar, starch, or mineral salts. Most of this weighting is in the weft as the warp has to stand the greater strain in the weaving. The little pinholes that come so suddenly and unexpectedly in new silk skirts, we all know. These holes are first seen when the goods are held to the light and are generally caused by the metal salts used in weighting the silk. The small particles of salt used adhere to threads of the silk; when the threads rub against one another the roughness of the adhering salt makes them break. Mercerized cotton looks so like silk under the microscope that cuprammonia has to be used to bring the twist back to the cotton fibres.

Very much of the same course of work as that outlined for wool is followed with every other fibre. The artistic and historic study of each fibre is also considered in detail. When time allows it, quantitative work is taken up in the laboratory, and what revelations are made! Table linen, towels, and other goods marked linen, are found to have a large percentage of cotton. The students bring their own material as much as possible for these tests. Through all this study, the economic side of the question, as seen by the consumer, is taken up, even the intricacies of Schedule "K" being touched on in order to show the relation of the consumer towards our much protected wool industry.

On the hygienic side, experiments are made to test the different absorbent powers of wool, cotton, silk, flax, in reference to the choice of materials for underclothing. The subject of healthful and appropriate dress is made the basis for much discussion. Throughout the course, stereopticon lectures are used to illustrate the points taken up; visits to factories and stores; and a complete exhibit of materials, both before and after they have been subjected to wear, is used as a ground for comparison, and as a basis for the last part of the work.

The division of income, estimating the cost of clothing for individuals and families, and the application of the principles learned in the course in planning the equipping of a home with materials that will

wear the best, at the smallest cost, completes the work. We spend much time in studying the wearing qualities of carpets, rugs, etc., the prices of the different kinds of curtains, and the relative merits of net, scrim, and lace.

In the purchasing of table linen much depends on the judgment of the buyer. As there are now so many ways of adulterating this class of goods, we take the subject up in detail. We are greatly aided by the careful records and samples of table linen and towels kept by the matron of one of our halls. These cover different kinds of table linen that have been used, the effect of constant laundering, the question of plain linen versus pattern cloth, and most important of all, the difference in wearing value, as shown by a slight difference in price per yard. This will be of value not only for the teacher and the matron of an institution but for the home maker.

Having thus briefly sketched the body of knowledge upon which a textile course in college is founded, let us see how this knowledge can be applied in the elementary and high schools as a basis for domestic art work. In the sewing in the lower grades, the study of each material that the child is working on gives an added interest, and should be a fundamental part of the work. This may be taught at the beginning of the lesson by illustrative materials, pictures, etc., and the children should make collections of materials, with prices, learning the relative prices and values of different fabrics. Or the study may be approached through the industries in the constructive work of weaving. The work may be correlated with the other work in the grades by the raising of flax and cotton in connection with nature study.

The problem of how the work should be presented in the elementary schools rests after all with the individual school, but if the teacher knows the content of her subject the application can be made as best suits her particular needs. In the high school, the work in dyeing and testing materials may form part of the chemistry course; but in whatever way the work is given, a thorough knowledge of materials should form a basis for all the work in sewing, dress-making and millinery. In dress-making, the selection of material is fundamental and vital. Judgment is required to select material that will have the best wearing qualities, fastest dyes, and be best adapted to the needs of the purchaser. In wash goods, comparative experiments in shrinking, fastness of color, and exposure to the sun and light would be a great help to many who have little money to spend.



In the matter of dress trimmings, we find special need of teaching values in purchasing embroideries, laces and bands, so that the purchaser knows the wearing qualities of her goods and how to obtain the best results from the least expenditure of money. How dependent the student is on the knowledge of her teacher was impressed on my mind when visiting a large technical school in New York. The graduating class of girls from a very poor locality were making their dresses and while their stitches were fine and even, what of the materials? Embroidery at \$1.75 a yard and lace at nearly the same price. From the general appearance of the students, I could only think that the money must have been expended at a cost of the necessities of life, not only for themselves but at great sacrifices made by their parents. Is there any practical or ethical value in such instruction, and was it not caused by the teacher's limited understanding of the scope of the subject?

A course in millinery should include the study of velvet, silks and braids, the necessary tests for these materials, the renovating of material, and the removal of stains without injury to the fabric. Some work in weaving is often given, but the question of time always limits the work.

No matter from what condition of life the student comes or what her future may be, she will be a spender of money as well as a producer. In order that she may save, we teach her to patch, darn, make dresses and hats at the least possible expense; but of what use is this if we do not teach her how to select and buy the material on which she works? Ready made clothing will consume much of her income; should there not be standards of judging this as well as the numerous other materials which must pass through her hands?

Shall we not then educate our students so that the term "practical" may mean something more than immediate? May not the larger view of the standards of living and the responsibility of the consumer be made as real and personal a part of the work as the immediate results which are achieved by the student?

## TEXTILE EXPERIMENTATION.<sup>1</sup>

AGNES HOUSTON CRAIG.

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It is not the purpose of this paper to set forth the technique of textile experimentation, but rather to suggest and discuss its significance and scope as pre-requisite to the highest accomplishment in all aggregated courses of household art, and as fundamental in the complicated problem of standardizing household economy.

Before standardization can be achieved in the ultimate problem of the home, each factor involved must be recognized, and its relative significance determined. Up to the present time food analysis and preparation have been most intensively investigated by students of Home Economics, to the neglect of other essentials, but recently inherent merit has been establishing the just claim of the textile interest with its composite inheritance of historic, scientific, aesthetic, economic, practical, and ethical values, until we are forced to acknowledge it, not as an adjunct but as fundamental to the Home Economics superstructure we are struggling to erect.

Concerning the use of the income, there are two fundamental ideas that cannot be too much stressed. The spender must know how to choose with a view to securing the worth of her money in furnishings, equipment, and supplies; and she must be able to recognize the causes and avenues of waste. The realization of these conditions depends on first, the exercise of scientific judgment in determining the appropriateness, aesthetic value, and durability of the article to be selected; and secondly, the practice of scientific management in its use and care, based on well organized information and established method as a means of controlling waste of money, nervous and muscular energy, time, and commodities.

It is not an exaggeration to state that perhaps the greatest source of waste attributable to one cause may be found in the lack of scien-

<sup>1</sup>Presented at the St. Louis meeting of the American Home Economics Association, December 1910.

tific judgment displayed in the purchase, use, and preservation of various kinds of textiles used for house furnishing and clothing. Yet a logically established knowledge of certain artistic, scientific, and economic laws, in the minds of consumers, would soon revolutionize the production and consumption of textile fabrics.

Through personal experimentation and as a result of observation relative to general methods used in the teaching of that group of textile subjects commonly classed under domestic art, I do not hesitate to declare that in the majority of cases it is being taught in a mechanical, amateurish, and uneducational manner. It is the old story of the cart being put before the horse, resulting in the prevailing condition that too much time is wastefully expended on the technique of sewing, chiefly because the average student is forced to attempt expression before she has acquired fundamental and inspirational knowledge. After all, efficiency through mental development is paramount, and technical skill should be a result rather than a process of instruction. A broad and general knowledge such as develops a critical and receptive aptitude for the science or art in hand should precede or at least parallel training in technical proficiency.

Textile study should be approached historically.

One of the surest methods of arousing interest in any specific subject is by presenting historical facts closely related to it. Human history is the record of the development of the inventive faculty, and the history of invention is the history of intellectual evolution. In this evolution textile fabrics have been constantly and closely identified with both the origin and the development of mechanical invention until today they constitute a vital economic factor in many of the modern problems affecting the cost of living.

With this historic setting the scientific content of textile study offers a rich field for experimentation.

Not long ago I had the pleasure of reading an interesting outline of chemistry courses and their relation to food investigation in connection with Home Economics as it is taught in a well known institution. The writer made the following statement:<sup>1</sup>

All students of Home Economics who are candidates for degrees take the course in general inorganic chemistry. . . . Those who have proved themselves capable of winning their way in science and who show an interest in scientific things are encouraged to make the best of their capabilities in an extended study of chem-

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<sup>1</sup> *J. Home Economics*. 2 (1910), No. 4, p. 399.

istry (relating to food investigation). Those who have not shown such interest but who have satisfied the requirements in chemistry for the first year pursue work in decoration, design, sewing, and similar subjects.

It is this very attitude toward that body of subject matter embodied in textile art that forces me to take issue with such a statement. Distinguished work in this type of "decoration, design, sewing, and similar subjects" depends quite as much upon a thorough basic preparation in chemistry, physics, and the biological sciences as does the subject matter of domestic science, so that educators interested in the problem of the standardization of the home are working in vain for satisfactory results so long as they ignore this phase of household economy.

It is not only the tendency of incapable students to elect domestic art because of the prevailing impression that scholarship is non-essential to it, but teachers who should know better encourage them to do so. So long as this attitude is countenanced and practiced, mediocre results will cause school boards to continue voting this phase of Home Economics a failure.

In dealing with students taking this group of industrial courses, I find them particularly deficient along the following lines:

(1) They lack the power of concentration; (2) logical thinking is unknown to them, because their reasoning powers have not been properly trained; (3) they are barren of ideas and have no conception of how independently to attack a problem.

With such a lack of the essentials to expression in any form, how can we expect reactions in the form of technical proficiency? As remedial to this condition, every student of Home Economics should have in connection with textile work, foundation work in inorganic chemistry, organic chemistry, physics, and biology, at least for the training they give in establishing habits of accurate observation and of independent and logical thinking under critical observation and because of the many close relationships of these subjects to the production and practical every-day use of textiles in the home, in the arts, and in manufactures.

In the biological field elementary botany may be followed by courses many phases of which are closely identified with textile interests, such as the following:

(1) Economic Botany:—Dealing with commercially important plant products and their utilization in various industries, and with the laws determining their distribution in culture.



(2) Bacteriology:—In its relation to industry, morphology, taxonomy, physiology of bacteria, bacteriological analysis, etc.

(3) Physiology, Hygiene, Pathology:—Considering the relation of clothing to the structure and functioning of the human body, their detrimental or favorable relation to circulation, respiration, preservation of animal heat, absorption, secretions, excretions, nervous energy, skin ventilation, infection, and disinfection.

This class of knowledge will establish a reliable basis for scientific judgment concerning (1) general health requirements and conditions; (2) problems of pathological sanitation; (3) thermic properties of clothing; (4) the infection and sterilization of clothing and textile furnishings; (5) clothing as a factor in producing fatigue, through (a) weight, (b) restricting skin ventilation and circulation, and (c) color psychology; and (6) relation of fibres and texture to regulation of bodily temperature, suitable cold weather fabrics, suitable warm weather fabrics, and basing the selection of clothing on the requirements of age, occupation, and condition of health.

The physical sciences also offer a wide department of practical investigation that will be of value in determining fibre characteristics, chemical reactions, and the best methods of treatment where fabrics are subjected to such conditions as dyeing, laundering, and dry cleaning.

In chemistry stress may be put on:

(1) Agricultural and commercial phases.

(2) Qualitative analysis, including fibre tests, determination of comparative characteristics, identification of adulterations, sizings, mordants, etc.

(3) Quantitative analysis of different types of fibres, mixed fabrics, shrinkage of different varieties, tests for tensile strength, moisture in raw and manufactured fibres, relative capacity of fibres for holding dyes.

One of the most valuable phases of the chemical study of textiles is that pertaining to dye-stuffs. In laundering, which is unquestionably a textile subject, such fundamental chemical knowledge would greatly modify one of the most alarming forms of waste in the household. Under this head would be considered among other things, the following:

(1) Bleaching agents, soaps, oils, mordants, and typical cleansing processes with reference to their effect on the various classes of fibres and dyes.

(2) Dye stuffs:—raw pigment and color harmony, classes of dyes, susceptibility of fibres to absorb color; solubility; reaction with alkalis, acids, metallic salts, and tannin reagents; chemical reaction of dyestuffs on physical structure of fibres; colorimetric experiments; etc.

In physics special stress should be put on the study of heat radiation and light. The physics of color is most important and in view of the very interesting investigations that are being carried on in the general subject of color too thorough ground work cannot be established.

This subject of color naturally suggests the next phase of our general topic, namely, the aesthetic consideration in textile study. Within this field there are two essentials that cannot be strongly enough emphasized as significant factors of household art and which are also important features of economy. They are most essential and indispensable requisites to success in textile work. I refer to the following:

(1) Proficiency in free hand drawing and a working knowledge of the principles of design.

(a) All constructive expression, whether it be literary, musical, dramatic, architectural, pictorial, landscape gardening, costumic, etc., should conform to the three principles of order and beauty, viz. harmony, balance, and rhythm.

(b) In connection with these principles there are certain laws of composition that should be appreciated and to some extent understood by the student before serious constructive expression is attempted. These are the laws of appropriateness, principality, subordination, repetition, variety, and unity.

(2) There should also be thorough training in the art of color relative to the meaning of hue, value, chroma, contrast, harmony, and texture; ability to show some skill in mixing and combining colors; familiarity with the simple principles of the aesthetic theory in its relation to form and color; and the psychological significance of rhythm, color, tonal fusion, and symmetry.

In connection with this art study the previous parallel work in physics and chemistry will be invaluable.

Although many of us are accustomed to thinking of the aesthetic as non-essential to our everyday activities, brief study and investigation will soon prove that it is an important economic element. Economy value should be the basic idea of all these interests so that practical economy may be rationally applied to all these kinds of home furnishing, clothing and management.

In connection with this economic study textile fabrics should be investigated as a feature of political economy. Relative to the supply of raw materials, their manufacture, and the labor problems involved, this subject occupies an important place in the field of production. From its more general consideration in political economy, consumption as it is related to the department of Home Economics will furnish a fruitful field for study and experiment in the following interests:—

(1) Money economy in connection with the individual income. In this connection consideration would be given to original cost of fabrics; relative differences in cost depending on comparative durability of the fabrics themselves, and of home made versus ready made furnishings and clothing; money involved in maintenance as it is affected by method or lack of method in management.

(2) Nervous and muscular energy as they are affected by clothing and surroundings and by management.

(3) Time economy in classroom and home activities.

(4) Economy in the use of commodities as affected by scientific judgment in selection, appropriate use, and preservation, through scientifically formulated processes of laundering, bleaching, dyeing, dry cleaning, etc.

With careful and logically arranged preparation in the foregoing fields of specialized knowledge which may and should be closely correlated, the practical technical or constructive work would not constitute the most important part of the industrial courses as it undoubtedly does in too many institutions, but would teach the best methods of construction so that students may express correctly original ideas resulting from purposeful thought that is firmly based on related and inspirational knowledge.

Within this department there should be sufficient experimental work with the manufacture of fabrics to establish expertness in the identification of standard materials. This may include microscopic examination of fabrics and constructive work that will result in familiarity with (a) weave formations and structure based on warp and woof; (b) the classification of weaves, derivative weaves, and weave combinations; (c) texture as modified by weave and color; (d) standard weaves and materials; (e) steps and processes in the manufacture of cotton, linen, wool and silk; (f) finishing processes; and (g) dyeing. There should also be considered the mechanics of construction, this including (a) hand sewing, plain and decorative; (b) machine sewing; (c) spinning and weaving; and (d) practical shopping.

The study of textiles in some such comprehensive and scientific method would undoubtedly dignify the course in domestic or household art. It would also develop a vital and practical field of research in physics, chemistry, and biology, and create the demand for a more definite standard in textile fabrics.

Each state university should establish and maintain a textile experimental station and practical demonstrations of the various phases of textiles should constitute an important department in all extension courses of Home Economics. At the same time textile manufacture should be legislated on just as has been food manufacture.

With regulating measures for the manufacturers, and practical education for the consumers, Professor Commons' score card may be used not only as a standardizer of the house, but also developed further and adapted to the measuring and grading of general home furnishings, textile equipment, and clothing. The ethical value of such training would be demonstrated through the popular appreciation of the principles of artistic expression in its relation to common things; through the popular exercise of scientific judgment in the expenditure of income for textiles and through the adoption of scientific method in management which would contribute much toward the elimination of waste, and mean greater average efficiency and resourcefulness.

Surely definite accomplishment in these fundamental problems will contribute much toward that consummation so much desired—the standardization of Home Economics.



## SOME TEXTILE TESTS IN CONNECTION WITH THE CHILD WELFARE EXHIBIT.<sup>1</sup>

GRACE DENNY.

A Child Welfare Exhibit was held in New York City during January, 1911. Its purpose as stated by the committee was to "demonstrate the economy of concentrating efforts for human betterment upon the children of today." There were departments relating to (1) the health of children, (2) their recreational life, (3) their vocational adjustment, (4) their civic training, (5) their preparation for home making, and (6) their moral and spiritual development.

The relation of textiles to this great philanthropic movement may not at once be apparent. The subject has, however, a close connection with two of the important divisions—those of health and "homes." The latter includes housing, food, and clothing. It was the purpose of the committee to represent graphically the wise expenditure of the income of the typical family, basing the estimates upon More's Working Man's Budgets, and Chapin's Standards of Living. A family of five with \$800 per year was chosen. Of this amount, but \$100 was allotted for all the clothing for one year. The father's portion was \$33, the mother's \$25, and the three children, all under working age of whom the eldest is a boy, had to be clothed summer and winter for \$42. Clothing for the children at different ages was shown, and as far as practicable, comparisons of ready-made garments attempted with those which could be made at home. Reasons for the choice of certain materials were pointed out. Pamphlets for free distribution gave simple and practical hints on how to shop, how to care for clothing, and why it pays to do so, with some essential facts on the hygiene of clothing and a few suggestions as to good taste in dress.

As a student of textiles in Teachers College, I was asked to test a number of fabrics from which selections were to be made for the clothing

<sup>1</sup>Presented at the St. Louis meeting of the American Home Economics Association, December 30, 1910. The work reported was carried on at Teachers College, Columbia University.

exhibit. The results of these investigations show a very limited portion of the field in textile analysis. In fact only a few inexpensive materials are represented in this group. Yet it furnishes an illustration of the practical value of textile study. The final selection of materials was not based upon the results of chemical tests alone, but included laundry and weathering experiments and certain physical tests, such as the determination of tensile strength in cottons. My work was done under the direction of Dr. H. T. Vulté, Professor of Household Chemistry, and with the help of Miss Ellen Beers of that department.

An assortment of samples from many so-called "woolen" materials was obtained by the textile committee from various places in New York City. Some of these were found on the push-carts in Orchard Street on the lower East Side; others at large and reputable but moderate-priced stores. The widths varied widely but the average cost was 50 cents per yard. The purpose of making chemical and microscopic tests on these materials was to find out first, the percentage of wool present; second, the way the cotton and wool were interwoven; and third, the quality of wool used.

The determination of cotton in the wool samples was made in the following way: Two pieces of equal size were taken to show a comparison of the original sample and the same after the wool had been removed. In case the material was found to be all wool, there was, of course, no residue. One of the samples was accurately weighed and then boiled in a 5 per cent solution of caustic potash for 15 minutes (which destroys all the wool). It was then rinsed in acidulated water, dried, reweighed, and the percentage of wool determined (allowing for a 5 per cent loss in the weight of cotton due to the slight action of the caustic potash on the cotton fabric).

The relation of cotton to wool in the cloth is often shown plainly by the form in which the cotton is left. If a piece of woven fabric remains, we know that either wool was mixed with the cotton in the yarn before weaving, or was blown into the cloth mechanically during the felting process and finished over to give the appearance of woolen material. Particles of wool used in this way are called "flocks" and, in the course of time, wear off the surface leaving the cotton background. The cheap eiderdowns represent a class of materials so poorly made that the wool wears off the surface in the same way. The cotton threads are sometimes left in a mass, showing that wool yarn was used only for the woof.

A sample of shepherd's check showed a cotton warp with every other check filled by cotton woof, thus practically but one-third wool.

These proofs were not accepted, however, as conclusive concerning the arrangement of cotton and wool. A microscopic examination was made of warp and woof threads in every instance to identify the fibres present. In addition to this an attractive color test was used on the white flannels. Fuchsin dye turns wool a deep pink, leaving the cotton white or nearly so. This is most effective when used on flannel having a cotton warp with wool filling.

The microscope made the most interesting revelations as to the ingredients in these materials. None contained first-class wool. Some showed good fibres mixed with inferior grades. The "all wool" pieces were made chiefly from shoddy or regenerated wool. This was indicated by the various sizes and grades of fibres, their tendency to curl, like cotton, and the inequality in dyeing. Many distorted or diseased fibres were noted and also those injured by extreme heat and severe treatment.

A number of cotton fabrics were tested as to the amount of finish or dressing present. Each piece was boiled for 15 minutes in a 5 per cent solution of oxalic acid, thoroughly washed and dried. Although this is not a laundry test, the results show very plainly the relative fastness of the dyes in gingham, and something as to the wearing quality of the different materials. The purpose of the test is, of course, to determine how much of the weight and appearance of the fabric is due to finishing processes and how it will look when this effect has been destroyed by repeated washings and wear. A comparison of the original samples with those which have been "boiled out" indicates that those fabrics containing a large amount of stiffening and those having a finish applied after wearing, as the crepe effect on cheap cottons, do not have the body or firmness after the finish has been removed that one might expect.

In general the results of this examination of materials show that in buying dress goods for 50 cents per yard, one cannot have all wool or even good wool mixed with cotton. Something must be sacrificed. The textile committee found that it was a case of choosing "the lesser evil." The experiments also reveal something of the complexity of the textile problem. The variety of finishes employed on all kinds of cloth are deceiving even to one who has been studying the subject seriously. It is very difficult to make general conclusions until a

greater body of information has been accumulated. Comparatively little has been done so far in this field. Sufficient results have been obtained, however, to demonstrate the need for thorough scientific investigation of the subject which shall lead ultimately to the establishment of certain textile standards in this country.



## TEXTILE TESTING LABORATORY FOR THE UNITED STATES ARMY AT GOVERNOR'S ISLAND, N. Y.<sup>1</sup>

FLORENCE WINCHELL.

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Probably few of us have ever realized how much of the beauty of a marching army is due to the uniforms. For every man to be dressed identically seems at first thought to be a simple matter, but when one considers that some men's suits may have seen months of hard wear and others be practically new, yet the whole regiment still presents a single color, he realizes that the clever selection of materials is the secret of the uniform.

Hundreds of thousands of hats, overcoats, worksuits, suits of underwear, woolen and cotton socks, army blankets, all sorts of insignia for the officers of many ranks, tents, iron beds, mattresses, mosquito bars, and hosts of other essentials are supplied by the government for the use of the standing army. One phase of the problem is the need for absolute uniformity throughout the country.

This means clever and intelligent buying. The materials must be of very good quality and the tailoring well done. The suits supplied in California must be exactly like those for Florida. Old uniforms must present the same general appearance as new. Such buying cannot be done haphazard.

This exactness in uniforms demands that a standard for each article be established and that this standard be of such a grade that hard service and exposure to all sorts of weather will not change its appearance. The government has established centers for the drawing up of these many standards and the close examination of the materials supplied by the manufacturers.

For everything supplied to the army, specifications are drawn up by direction of the quartermaster-general, who is in charge of these

<sup>1</sup>Presented at the St. Louis Meeting of the American Home Economics Association, December, 1910.

stations. Every shipment received from the wholesaler must conform to these specifications. When any possible improvement is discovered, any material a little better suited to the needs, new specifications are drawn up and the old discarded.

On Governor's Island, just ten minutes' trip across the river from South Ferry, New York City, the government maintains a warehouse for the storage of army uniforms. Under the same roof is a station for testing the various materials supplied by the wholesale firms for overcoats and linings, work blouses and linings, work trousers, dress coats and linings, dress trousers and army blankets. Other materials are tested at other stations.

To follow one garment through its respective processes is the simplest way to understand how the uniforms are prepared for delivery. Let us take the olive drab kersey work blouse as an example.

A piece of kersey is selected. This must be heavy enough for warmth, not too hot nor too heavy to carry on the march, of such a quality of worsted that it will keep its shape and endure hard service, and must be so dyed that thousands of yards can be supplied without variation and that exposure to sun, rain, etc., will not change its tone. It must be unchanged by perspiration and washable in soap and water. The linings must be as carefully chosen, with mohair serge for the body part and silesia for the sleeves.

When such materials are found, the cut of the blouse must be decided upon. After the garment is well tailored according to the selected style, if it is satisfactory in all respects it may be used as a model.

Manufacturers soliciting contracts for the manufacture of the material are supplied with samples of the selected standard of kersey. They are also given copies of the specifications, to which this kersey is to conform. Once a manufacturer has taken a contract to supply such a quality of kersey, the station sends a representative to the mill to keep track of the contract. It is his duty to supply the contracting officer at the station with samples of the wool used in warp and filling in the clean state and also after mixed to the proper shade, as well as spun yarn for both warp and woof. These must be submitted with the first shipment of goods and with each 5000 yards following.

When the bolts of goods are delivered to the station they are examined according to the specifications, each bolt is weighed, measured as to the number of yards on the bolt, width of material, and the number of warp and woof threads to the inch. From each bolt a sample is

cut. This is used for the chemical tests and tests for tensile strength and weathering.

The chemical tests are solely for dye. Lactic acid and citric acid tests are used to test the dye for perspiration. To test for weathering, the sample is exposed flat on a roof for thirty days. The change should be practically imperceptible.

The dynamometer used for the strength test hangs upon the wall. Its two steel jaws which hold the sample in place are set exactly one inch apart. In testing the warp threads the sample is placed with the jaws set precisely parallel to the woof threads. The jaws are then slowly and steadily drawn apart by the turning of the wheel. The breaking point of the warp threads is automatically registered in pounds. The woof threads are tested in the same way. The specifications for this kersey state that the breaking point of both sets of threads should be at least 70 pounds.

Any requirements not actually mentioned in the specifications are to be taken from the standard sample. Materials supplied by the manufacturer are expected to fill all requirements of the specifications. Usually, these bolts of cloth are very attractive, so perfect in every respect, with no creases or folds, no spots of dye, no imperfections of weave. When materials are below standard the shipment is rejected. Such rejected shipments are sold for other uses. We should probably feel fortunate if we should buy them for they are probably much above those ordinarily supplied to us by a retailer.

The government does not maintain its own tailoring establishments, but supplies the contracting tailors with models and patterns for the desired lot. An officer usually takes the necessary materials to his own tailor but the enlisted men, unless of very unusual build, can be well fitted from stock since there are thirty-two different sizes and proportions from which to select. The tailored garments are again returned to this same station on Governor's Island. Here each garment is carefully examined for possible defects and then stored away in the warehouse, ready for shipment when needed.

Certainly no details are neglected in securing the most attractive and durable garments for the use of the United States army. The unscrupulous or indifferent wholesaler will always find his goods returned. He can supply the less intelligent consumer.

## THE VALUE OF A COURSE IN HISTORIC COSTUME.<sup>1</sup>

JANE FALES.

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During all the years since household arts has been a part of our system of education, dressmaking has been generally conceded to be the most important technical subject in the domestic art course; yet its "art side" has been practically overlooked, or at best only slightly touched upon. If students of dressmaking have been taught drafting to measures, cutting, fitting, and finishing, the teacher has considered her duty to them done; and a dress might be adjudged technically satisfactory if these details were perfectly worked out, although appropriateness or artistic design were wholly lacking. A view at once broader educationally and more practical would demand, as a result, training in domestic art products which show not only technical perfection but also harmony in purpose and artistic design.

Recent unsuccessful attempts at originating or making fashions in America which could be called American, and the feeling of nearly all good dressmakers against the movement as shown by their continued use of designs made in Paris, should lead teachers vitally interested in improving methods and maintaining high standards to study the reasons for this and to answer two questions: (1) Why is the best dressmaking done in Paris? (2) What can they as teachers do to make American dressmakers more resourceful and artistically discriminating?

Even the slightest investigation shows that hand in hand with the cutting, fitting, and finishing of a costume must go two other requisites to produce what would be considered in Paris a successful result. These are first, a feeling for and knowledge of artistic design in dress, and second, originality.

The first includes a working knowledge of color-color combination, and its effect on the wearer; a consideration of line in relation to the figure, and the ways in which, by careful consideration of line and pro-

<sup>1</sup> Presented at the St. Louis meeting of the American Home Economic Association, December, 1910.



portion, one point may be accentuated and another concealed. All this can be achieved by courses in costume design, carried on in close connection with the dressmaking work. The interest shown in this appeal to artistic feeling, and the immediate response from the majority of the students, quickly proves the value of such courses.

The second necessary adjunct, which I have called originality, is far more difficult to achieve, and yet is of as great importance. The saying of a famous Frenchwoman is significant—"There is nothing new in this world but that which has grown old enough," and we must get the inspiration for our needed originality by studying not present day costume but that of bygone centuries. In America we have no past. Centuries of time, great revenues, and leisure for the appreciation of artistic pursuits, we have yet to attain, and while attaining we must look to other countries for those things which are "old enough."

Fortunately it is not necessary to study costumes of all countries, but only those which are best suited to our particular needs and which best furnish inspiration and stimulus because of their artistic merit. With limited time—and time is always limited in a college course where the list of requirements is fairly large, and the electives offered alluring—it seems best at present to confine such a course to a rather careful survey of the dress of the following nations: (1) Ancient Egypt, covering its three important dynasties; (2) Greece, when the wonderful art of that country was at its highest; (3) Rome, which shows chiefly a modification and degeneration of the Greek costume; (4) Ancient Gaul; (5) the Franks (these last three are important because from them came the elements out of which grew the beginnings of French costume); and (6) Modern France, from Merovingian days to the final establishment of the French Republic.

The costumes of these nations offer a great variety of designs, important for different purposes, but all of distinct value. For instance, from the study of Egyptian costume we get suggestions regarding richness of color and great variety in conventional design, especially useful in dress decoration; from the Grecian, grace and simplicity of line; while from the French we get more for costume than from any other country. Some periods are of greater importance than others. During the Renaissance the French revived the art of the classic age, selecting what was best and adapting it to their needs. Later they show us combinations and adaptations not only from Greece and Egypt

but from various other countries with which they came into political or social contact. Today the libraries of Paris contain wonderful collections of costume illustrations, old prints, old photographs, and old fashion sheets. These are for the use of the interested public, and to learn how greatly their value is appreciated, one has but to watch the designers of the great Paris houses constantly studying them with as much care and interest as the student of English literature gives to Chaucer or Browning.

From this careful study of bygone fashions our present-day styles are evolved. Costumes are generally not adopted as a whole, but adapted in part by designers skilled by constant practice in this work. Nothing is more interesting than to trace modern fashions back to the days of ancient Egypt, to the Middle Ages or to the Renaissance.

There is indeed "nothing new," and for the seeker there lies a vast field of resources, which being discovered add immeasurably to the capability of all who wish neither to study nor to teach dressmaking along the old lines, so long accepted and so severely criticised.

How best to place at the disposal of the greatest number these resources is the present problem. A study of historic costume is not a simple matter, but requires patient research, and many hours spent in careful selection in order to get a sufficiently wide range of important and practical information. The sources of information are somewhat limited, and at present no simple text book exists. Histories of the ancient Egyptians, of the Greeks, of the Romans, of the Gauls and Franks must be carefully read, because many contain valuable hints or descriptions of costumes. Old engravings must be sought and studied; fashion sheets, which did not appear with any regularity until after the French Revolution, must be collected and examined. Various histories of costume must be read and compared. The historical text books are usually easy of access in public libraries; engravings and fashion sheets are expensive and hard to acquire, especially in America; and while there are many reference books, those of real value, such as Racinet's *Le Costume Historique*, are in French, with the exception of some that deal exclusively with English and American costume, and consequently are of little use to the average student of dressmaking. But the teacher who appreciates the value of this study, and who recognizes its significance in the development of the American dressmaking of the future, will find the way in spite of limitations and difficulties.

## ART THE FOUNDATION OF DOMESTIC ART.<sup>1</sup>

LUA R. CRAWFORD.

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All human beings exist both physically and spiritually. Uncivilized man demands more physically than he does spiritually. As he advances he asks more for the spirit. Civilized man not only strives for that which will keep the spark of life in his body but seeks for something that satisfies his soul.

Every civilized person has a longing for the beautiful, whether that beautiful be expressed as a kind act, a sunset, a couplet in verse, a song, a picture, a charming face, a harmoniously planned room, or a lovely bit of handiwork.

Beauty is a thing of the soul. Whenever an individual has produced a beautiful thing there has been growth and appreciation in his soul—and this is of infinitely more value to him than had he produced something which had no other excuse for being than that it served some necessary physical need. Kenyon Cox says, "We have come back to the old-time notion that one of the finest things art can do is to make some useful thing beautiful." Complex life demands many implements. If we build these implements of life so that they are beautiful as well as useful we have made them twice as valuable. The beautiful thing produced is the expression of the individual and whether the expression be conscious or not it has entered the realm of art.

We, who are interested in technical education, hope much for our boys and girls when we have brought them to the point where they can independently build pieces of furniture which will be strong and hold together—can make dresses that answer the purpose of clothing or cook dinners that satisfy hunger—but we will have done far more when we have led them to do all of these things as the expression of the individual in the most beautiful of ways.

<sup>1</sup> Presented at a joint meeting of the Household Arts Section of the North-Eastern Ohio Teachers' Association and the Ohio Chapter of the American Home Economics Association, Cleveland, O., Feb. 10, 1911.

This year a new course in art is being worked out here in the Cleveland Technical High School which correlates art and sewing (beauty and use). The majority of girls who come to this high school come from the average home. It is most probable that they will eventually marry and become home-makers. I believe that when in any way we can help these girls to live more sane, clean, and beautiful lives in their homes we have done just so much for the commonwealth.

Every girl ought to have a training in the principles of drawing if for no other reason than a cultural one. She ought to be able to draw and design and construct in a simple way. The principles so learned should be applied to problems in real life. The problems we are just now most interested in are those of domestic art which I make include sewing and house decoration and planning.

Along with the ability of the girl to draw and to design in connection with her domestic art, I place the ability to know and appreciate good things, those well and beautifully designed, for in all probability she will have as much, if not more, opportunity to exercise her judgment in the selection of wearing apparel and articles for the home, than in their actual designing.

The course as planned covers two years but should in my opinion be of four years' length. The first year of school, four periods a week (each period three quarters of an hour long) are allowed for sewing and six periods for the art. The reverse is allowed the second year.

As I have said before, we carry the training in pure art along with the training in art as applied to domestic art, and we hope to make the first of vital importance to the second.

The school year is divided into three quarters. The first quarter of the first year we begin with nature drawing, principally outline work. Most stress is laid on detail plant drawing because it is from the detail work that we get units of design which form the basis of the design work throughout the year. Here, it seems to me, we can lay the foundation for appreciation of beautiful lines which certainly has plenty of application later in the designing of dresses. Here also, we study color—its composition and harmony. From the fall plants we make color notes which can be used as color schemes later in the work of art and sewing.

The first problem of domestic art with which we directly deal is the design for the stitching of the holder.

Since the holder must be stitched why not have it done in a beau-



tiful way rather than otherwise? Why can we not learn the principles of good proportion in the breaking up of a square space as well here as anywhere? As the holder has a very definite use in the cooking room, is made in the sewing room, and designed in the art room, the work in three departments is connected. This same problem might be carried out further in other forms of domestic art, such as the planning of spaces in plaids, the arrangement of panels in a door, and the breaking up of a window space with panes of glass.

A sewing bag is next planned. This offers an opportunity for using our previously worked-out color schemes in the selection of materials for our bag. We construct mechanically a well proportioned ellipse for the base, plan the height of the bag and the proportion of the heading to the main portion of the bag.

The first year of sewing involves for the greater portion of the time the making of underwear. At the end of the first quarter the girls begin underwear designing. The first problem is the designing of the ruffle for the underdrawers. The width of the ruffle, 4 or  $4\frac{1}{2}$  inches finished, is given them as is also the lace width. Either  $\frac{1}{2}$  inch or  $\frac{5}{8}$  inch lace is allowed. We precede the work with a talk about laces—their kind, pattern, texture, wearing qualities, and suitableness to the garment they are to be used upon. The problem for the girls is first to select a suitable lace, and then to divide up the width of the ruffle into spaces that are properly proportioned one to the other. A thing is never beautiful unless it is so designed that it fits the service for which it is to be used. So we talk about where the decoration on the ruffle ought to be in order that the shirring at the top is not interfered with by its decoration. We also try to have our lace width, hem width, tuck width, width between tucks, and width of plain portion in the ruffle adjusted in an interesting way. I want the girls to feel the difference in the planning of tucks to form a cluster from tucks that are simply scattered over a surface.

The planning of the ruffle is followed by free-hand sketching of a pair of drawers. Not only is this for training in free-hand drawing but also for the purpose of getting into the child's mind the general form of the object. After this they make a small drawing of their own drawers, endeavoring to express their correct proportions.

This work it seems to me has great value. If we had more time I would like the girls to do considerable free-hand sketching of underwear and simple clothes on the black board as a means of expressing

quickly any ideas of such things they might wish to use in their work. The good designers in the French dressmaking shops have enough knowledge and skill in the drawing of dresses so that they can sit down and sketch for prospective customers clothes that will become them. In the same manner the good architect makes his perspective sketch of the house he has drawn the plans for. The psychologist claims a person never knows a thing definitely until he can express it in words. We think the child never knows how a garment will look until she has made a perspective sketch of it.

In the second quarter of the first year we begin the drawing of still life with charcoal. We study form, light and darkness, shade and shadow, perspective. This ought to form a good beginning for the sketching of the human figures which comes in the second year and is so necessary to the understanding of dress designing.

We commence the latter part of the second quarter to design for the corset cover. We make a drawing which is comparable to the mechanical drawing of the boys. On the drawing of the actual pattern cut according to the bust measure of each individual girl, she plans the division of spaces across both the front and back of her corset cover.

This is followed by drawing a corset cover on the form (the form three-quarters view) and then copying the corset cover drawings cut from the fashion magazine. In the drawing of the corset cover on the form we teach a little perspective of the figure and will lay a foundation for dress designing. We talk about the curves in waist lines—location of middle front on a figure, the curve at the top that fits over the shoulders and the ellipses of the arm hole. Copying from magazine drawings is valuable in several ways, particularly in that it acquaints the child with the technic of fashion plate drawings. She learns how tucks, shirring, stitching, etc., are expressed.

The last part of the first year the girls design a bit of embroidery for the yoke of the nightgown. As this is a suitable problem to teach rhythm—the flowing in of one line into another—we make this such an exercise.

The last problem in underwear is the petticoat. The girl first divides her whole skirt length into plain portion and flounce so each is proportionate to the other. After this the ruffle portion is broken up into spaces.

In the second year, a little figure sketching is introduced, not so much for the art side as for the help in dress design. I give standing

poses three-quarters turned because I wish the girls to get used to the figure in that position. The greatest proportion of dresses are designed on the turned figure.

The sewing of the second year consists of a seven-gored skirt, a shirt waist, and two dresses—the first a simple gingham and the second a wool dress or a thin summer dress—depending on the season of the year.

In all dress designing we use an outline drawing of a form suitable to the average high school girl, making slight changes to fit various figures. If we were working for figure drawing I would not think this an educational thing to do, but as dresses are our aim and the girls know so little about the human figure when they are ready to design their first dresses, I feel that the use of the under figure is perfectly legitimate. The girls design their dresses on rice paper, using this form underneath. If I had third and fourth year girls in art I should work them in to designing directly without this help.

Before doing anything in dress planning the girls need to understand how to express the hang of skirts naturally, tucks and pleats in the skirt and waists, the fall of seams over the hips, the fit of yokes over the shoulders, roundness in dress, the appearance of the decoration on sleeves, etc. If the girl applies her knowledge of perspective obtained in still-life drawing she will be much helped.

Before commencing dress designing many things ought to be considered, such as color in dress for certain individuals, for certain places, and certain occasions; the influence of horizontal and vertical lines on thin and stout people; texture and design in dress goods; line in dress; and the combination of dress and trimming for harmony.

We strive to have each girl have her own particular figure in view when designing her dress and selecting her material.

Dress designing is accompanied by the copying of dresses from fashion magazines for the purpose of technic, and the drawing of dresses upon the form—this for acquaintance with the line and hang of dress.

Next quarter we are to commence the designing of hats—this being the first time millinery has been offered. The girls will be given considerable work in the studying and planning of shapes of hats with their trimming to fit individual heads. The head and the hat must be considered a unit and each hat suitable to the individual.

Color schemes for hats will be worked out so that they will be in

harmony with the natural coloring of the girls, the clothes they will wear, and the occasions on which they are to be worn.

This concludes the two years' work. If the course were of four years' length—as I think it ought to be—a larger part of the last two years ought to be spent on problems concerning the home. In fact it seems to me that it is more important that we have beautiful homes than that we wear beautiful clothes, for our homes are the foundation of the land.

There is no reason why our high school girls should not know good design in dishes, silverware, table linens, furniture, wall paper, carpets, draperies, etc., or that they should not know how to put these things together according to the best principles of art to make beautiful rooms in which to live.

There is no reason why they should not draw up house plans—should not know how the rooms ought to be arranged one with the other—or no reason why they should not know how to plan a beautiful exterior to the house.

Thus we are working and will work with our girls here in the Technical High School and I feel we are going to prepare them in some measure, at least, to become good home makers and good home keepers.

## ANALYSIS OF BLUES.<sup>1</sup>

L. RAY BALDERSTON AND MATILDA J. MCKEOWN.

*Teachers College, Columbia University.*

In our study, the analysis of blues has been considered from the practical as well as the chemical side. Blues most often purchased by the housewife were bought.

These blues were found to be of four types: Prussian, aniline, ultramarine and indigo. The liquid blues tested were all Prussian blues, while the ball or block blues were primarily ultramarines.

In analysis, the same amounts of blues were taken (1 gm. of solid, 10 cc. of liquid) and these were dissolved in 100 cc. of faucet water. The faucet water was used as the most practical side of the problem. After the blues were thoroughly dissolved in the water, the liquid

<sup>1</sup> Presented at the St. Louis meeting of the American Home Economics Association, December 30, 1910.



was filtered through balanced papers, all insoluble residue remaining on the paper. The filter papers were dried and the difference in weight represented the percentage of insoluble material or material not usable.

A second measured quantity was also dissolved in faucet water and sodium hydroxide added to precipitate any iron present. The iron would show as a heavy reddish brown precipitate. The sodium hydroxide solution was filtered and the residue washed with dilute hydrochloric acid (5 per cent). The iron was thus dissolved as a chloride leaving foreign material such as sand or clay in the filter paper. This test shows the percentage of foreign material, which is useless besides adding false weight.

The test for iron was made to identify those blues containing some iron compound. This identification is valuable to show those blues which, if used with clothes improperly rinsed, are likely to result in spotting with iron.

When the hydrochloric acid was added, hydrogen sulphid was given off in some cases, showing sodium sulphid to be present. This identified all ultramarine blues.

The solvent test was of interest from the chemical side in learning the chemical used to keep the blue in solution. In this test, the filtrate from the sodium hydroxide precipitation was treated with calcium chlorid plus acetic acid till acidified and ferric sulphate then added. If a jelly-like precipitate formed, oxalic acid was the solvent, but if the solution turned blue the solvent was potassium ferrocyanid.

All data from experiments were carefully recorded. The results were kept to be used as an exhibit for the classes in laundering, housewifery, household chemistry, and household management. The exhibit consisted of the filter papers holding their various residues, mounted between 5" watch glasses and sealed.

Bottles of dilute blue solutions were added to show various tints and tones of blues.

By way of making the exhibit complete, the original bottles, boxes, or cans, were placed in the exhibit case.

## ASPECTS OF ECONOMICS OF IMPORTANCE IN HOUSEHOLD SCIENCE.

DAVID KINLEY.

*Professor of Economics, and Dean of Graduate School, University of Illinois.*

I have agreed to give you an informal talk upon what we have been trying to do at the University of Illinois. If I say anything that is worth saying it will be along the line of our experience and practice there rather than to outline a scheme more or less ideal.

I have with me an outline of courses—not a paper, but merely an outline of courses as we have actually been giving them.

In the early days I took occasion to speak with Miss Bevier on this subject and urged that household economics as commonly taught occupied only a small portion of the field, and that many of its advocates had scarcely gotten a glimpse of the promised land of their subject. There is a large field in administration, as distinct from what is commonly spoken of as household economics. In order to get a comprehensive view of its possibilities we must take a study of the home in all its relations. To my mind the ordinary activities of the home—cooking, care of health, etc.—form an important part of the field but by no means the whole of the field. I think there is an administrative side as contrasted with the science side, and that this administrative side of the work has to do very largely with economics.

The things that you want to know are, what we have been working at and trying to get started in our household science on the side of administration. In the first place, I believe the young women who are studying household science ought to take a course in general economics. I regard it as a necessary foundation. This consists of the work outlined in the usual text books such as Fetter's, Seager's, and Ely's, in combination with collateral readings two or three times a week. This with us is the work of the first half of the year. Following it is the particular part of the work for the students in household science. In this they come to the study of a particular type of organization, the family, which is approached by us as we approach

the study of any organization, such as a railroad or other corporation. We study a corporation as an independent unit, producing, exchanging, consuming; its independent economic activities, and its activities in relation to other units of different kinds. So we take up the study of the family and get at it from that point of view, along that line of reasoning. We begin with a résumé of the history and structure of the family. We consider the structure of the family historically, for purely academic reasons. That is a subject we need to treat carefully as it brings us to the alleged destruction or decay of the family. I am one of those who do not care whether the family as it exists today decays or not, in the ordinary sense; I regard a particular structure, or form, of the family as unimportant, so long as the spiritual essence of the family-relationship is maintained and perpetuated. In other words, the structure of the family is changing constantly. If however, the spiritual essence of its relationships remains, that is the important thing.

In studying the family as an economic unit we discuss the history of the family organization, the basis of relationship of the members of the family, the relation of women and children to the father, and the gradual decline of the power of the father; the recognized legal rights of wife and children as individual members of the family; the economic status of the members of the family historically and actually; the relations of the family as an organized unit to society, socially, economically and ethically; and, lastly, the effect of the economic independence of women and older children on the form of the family.

In considering family structure I may say in passing that my own point of view is that the structure is relative and temporary and that the spiritual relationships are the essence of the family. The evidence of this is found in the fact that the family assumes different forms throughout the world, and at different periods among the same people, although we find the spiritual essence of relationship very much the same the world over.

We then pass in our study to the more purely economic aspect of the family. From this point of view it is simply one form of business organization. We study the reaction of the present form of industry on family life as organized among us. A consideration of the economic advantages of a family income derived from the man's work only, as compared with that derived from his work plus that derived from the work of his wife and children, leads us, among other things, to

the subject of child labor and the employment of women, particularly of mothers, and the influences of away-from-home work on the family, both on the mother and the children. Closely connected with this topic is that of the economic independence of women.

In considering the family as a producing unit we find that there is a great deal that is erroneous in our ordinary estimates of economic wealth, a great deal of the productive activity of women that is not taken account of. The work of the mother of the family and the young women at home is not recorded in the census, for example; but if they should go out into another family and do the same work, it would be recorded.

Consequently, it is necessary to study the nature of the product of the economic activity of the family; that is to say, the nature of the work out of which the family income is derived. The income is partly money, partly material goods directly produced and consumed, and to a great extent services. We see in our study that the income of the family is material and non-material and that the material part consists of money and of goods. This leads us to the study of the relative importance from an economic standpoint of the activity of the members of the family, the income of the father, the income produced by the children, most of which is a money income, and the influence of money economy on the productive organization of the family. At this point I bring into the course, and it seems entirely proper, an incidental study of some domestic industry; some students devoting themselves to the study of the arts and crafts, some to the production of artistic needle work or lace work, etc., so that each year reports are made showing the development of some form of home industry in which the student has become interested.

Then we consider the family as a consuming unit. Our study of this portion of our field is based on Professor Patten's Theory of Consumption, with special reference to the reaction of economic forces and motives on diet schedules constructed on physiological and chemical bases. Here we take up the laws of individual consumption, the laws of diminishing utility, harmony and variety.

I have had some young women—Miss Bevier perhaps does not know this—come over to me with a list of things which they claimed formed a perfect unit of diet; at any rate, there is no doubt that there was a harmonious total, sufficient in amount and perfect in the proportions of physiological and chemical elements. "But," I said to



the girls, "I could not eat those things;" or, "I could not afford to get them;" or "I do not like them." I wanted to show them the importance of taking into consideration the economic and psychological limitations of diet schedules and that these should be reckoned with in framing them.

Towards the close of our treatment of the family as a business unit, we take a hotel or an institution as a model for study, it being the nearest that we can get to illustrate the economic organization and activity of the family. The students take it in a simple form and later expand it, making diagrams showing the various forms and ramifications of activities and finding out wherein it differs from the ordinary family,—what things we have to add and what we have to take from an ordinary large boarding house in order to turn it into a typical family.

In connection with consumption we proceed to the very delicate subject (to most of us) of family expenditure, its classification, purposes, methods, relation to income, and household budgets. For this study the girls procure the accounts of sororities, boarding houses, and restaurants, as well as the budgets of individual students.

After considering the laws of individual consumption we ordinarily take up for brief study the possibility of increasing social consumption, or the consumption of the family as a unit; for I take it that there is a social consumption in the true sense of the word. That is to say, the family as a unit consumes certain things. These are chiefly what may be called esthetic goods or values. Several people may sit in that little room in Dresden in which is hung Raphael's great masterpiece, "consuming" the picture simultaneously. It is in this sense that I use the phrase "social consumption." There is, too, what may be called social use of municipal and other public utilities like parks, museums, galleries, etc., the "values" of whose collections are abstracted or consumed by more than one person at the same time. There is a great deal of the esthetic and ethical in family activity that belong to this category; and a discussion of the topic takes us into some of the innermost recesses of family life.

Following the study of family income and expenditure and closely connected with them, we enter upon a discussion of local markets, market organization, wholesale and retail buying, tables of prices, etc.

At the end of the course we discuss the "family in the community"—that is, as one of the social organizations going to make up society

in the sense with the church, the school, and other organizations. We inquire into the relation of the family to these other social units, its duties and rights in connection with them, and the reaction between it and them. For example, the educational function of the family has been very much modified by the public schools on the one hand and in religious training by the Sunday Schools on the other. To illustrate further it will be found that the growth of the Sunday School has decreased religious teaching in the family, probably has lessened the study of the Bible, and led parents to feel less responsibility for the immediate religious training of their children. This state of affairs has modified the family function very materially. The same results will be found in other directions.

There are, of course, many incidental topics which are not properly activities of the family but are so important in relation to the family organization that it is undesirable to leave them out of consideration altogether. Among these are divorce in its economic aspects, the elements of law, including contracts, bills, notes, insurance, domestic relations, and elementary accountancy, etc., which every young woman ought to know something about. Then there are the activities which women engage in largely outside of family duties, such as charity organizations, etc. These deserve some consideration in this connection because every member of the family should be trained up to have some *avocation*.

I think the matters I have touched on are things that every woman who will have charge of a household should know, as distinct from the woman who takes up the subjects for the purpose of teaching them. It would be an excellent thing if some student of household science would take up this side of the work and evolve the course which I have briefly sketched into a fully developed course in administration of the family as distinct from household science in the commonly accepted sense.

#### RESPONSE BY FRANK A. FETTER.

*Professor of Economics and Distribution, Cornell University.*

To me is assigned the task of the critic. It is my duty to emphasize my disagreements with the plan that has been presented. I do not, however, find myself in a pugnacious mood; rather I feel a mingling of admiration and envy in seeing what Dean Kinley has accomplished

in developing this course. His work has been pioneering. It is hard to find the path in the wilderness, or to sail into unknown seas. This course has been charting new lands on our educational map, and has been marking the way that makes the journey easier for all who follow.

Even the general course in economics in our American universities is comparatively new. It is not long since economic instruction in our colleges consisted of one term of recitations in an English textbook given by the gray-haired president, a retired theologian. Now the course, guided by specialists, widens, and every year sees some new subject added to the curriculum in response to a demand called out by our new social needs.

An ideal course in household economics is not to be had by taking a little of this and a little of that from other economic subjects. The course just outlined has perhaps something of this character of an educational croquette, nevertheless it is a very wholesome and nutritious dish. I once gave a similar pioneer course in agricultural economics. My equipment for the work was meagre, consisting mainly of lying in a hammock while on a vacation visiting country relatives. Today the course in the same institution is given by a man who was raised on a farm, and who, added to practical experience, has a good general and special agricultural education. Today he is giving a course in agricultural economics that makes me proud that I was his predecessor.

An analogous training must the person have who is to develop the work in the economics of the household. A woman who knows household problems and has done household work, who will take all that economics and sociology can give and pass it through the medium of her life's experience will develop a course that will make any economist proud that he was her predecessor.

The course outlined contains elements usually classed as sociology, as well as parts classed as economics. Possibly at the meeting tomorrow evening the sociologists will claim many of these subjects as their own. Especially do the sociologists claim the subject of the family. It seems clear that the study of household economics must begin with the study of the family, however greatly city growth has weakened that basic social institution. A teacher in a high school in New York City lately assured me that the family was an institution that no longer existed in American cities, and therefore, thinks this teacher, pedagogy ought not to assume a knowledge of



family life in deciding the methods of instruction. It is a serious fact if an intelligent person can even question whether the family has become anywhere in America an out-lived institution. At least it forces us to consider whether the influences which have been weakening and limiting the family life are normal, or are temporary and unhealthy influences. Is this an evolution toward better conditions or is it evidence of social disintegration?

The same problem is presented by the Sunday School and the Church, and we hear even ministers now asking whether (or at least how far) these institutions have lost their usefulness through changing social conditions. Whenever the causes which have given rise to institutions are weakened, those who have them in charge redouble their appeal to our sense of duty. But such appeals can only delay, not prevent, the inevitable, for social institutions cannot survive indefinitely upon a reputation acquired under circumstances different from those which now exist.

But in regard to the destruction of the family in the cities, I feel that it is largely not in accord with the true processes of evolution. I feel that it is largely due to artificial and abnormal causes. The overgrowth of great cities is itself due in large part to unnatural and illegal railroad discrimination, to unwise social legislation, and to false standards of public opinion. It is bad political economy, this crowding of vast numbers of people into great cities to earn their daily bread under physical conditions where good housing, good sanitation, healthy recreation, and a sound family life are impossible.

We must continue to look upon the family as normal, desirable, and an indispensable unit of society. As a source and center of practical training in the social affections, it is without a substitute; but we need to recognize the great change that has come over the city family as a center of economic production. Our instruction in household economics must presuppose this normal family training in the child's experience; it must assume that our education is preparing boys and girls for a later normal family life as men and women.

The lack of home training that makes for efficiency shows itself, however, in a large number of boys and girls as they come to college, and it creates the greatest difficulties in college teaching. In the private preparatory schools the pupils too often are coached and coddled and do nothing without guidance. In their homes they are shielded by the affection and ambition of their parents and are obliged to



do nothing for themselves and nothing for others except to study lessons in books. The fact that opportunity for an education in doing things remains even in the city homes is often quite overlooked. A childhood spent without practical training and personal responsibility must produce young manhood and young womanhood without initiative or true power of independent thought.

It is especially significant for the teaching of household economics that our girls, more often than our boys, suffer from lack of practical training. The fault lies with us, the misguided parents. We feel that girls especially ought to be shielded from all responsibility and from the performance of those duties in the home which would be worth much more in their development than years of bookish studies. We university teachers are strongly tempted to adapt our teaching to this passive quality of mind. But we can not shift our responsibility, and our teaching of any of the social subjects, including household economics, to be vital must include observation, investigation and practical training, along with precept and principles. Thus we may break this vicious circle, this endless chain of youth, untrained in the arts of the home, becoming untrained parents of another generation of untrained youth. A part of our task is to arrive at sounder notions of the kind of family life than is possible and desirable in our new social conditions. That, rather than the chemistry of foods or the cost of gingham, is the main task of household economics.

Training of this kind to reach the masses must begin at least as early as the high school. I have long been interested in working out a plan which should take such high school subjects as geography, civics, American history, etc., as a foundation and should add the study of family conditions and of the industries of the neighborhood. There would seem to be a need of a text-book along these lines, but even our ordinary text-books may serve well if in the hands of an extraordinary teacher. For example, the questions of demand and supply, of utility, and of economic consumption as ordinarily treated are little more than dry terminology. These subjects to be helpful in household economics must be discussed in terms of enjoyment and experience which the boys and girls have had. The traditional treatment of the theory of rent, as found in the ordinary books to which Dean Kinley has referred, is based upon the agricultural conditions in England 100 years ago, whereas the only renting of which most city dwellers know is that of tenements, apartments, stores, etc.

The problems of labor and of management, of wages and of profits, can be illustrated as well by domestic as by factory conditions. Trusts and monopolies, the money question, banking, all have a bearing upon the income of the family, and the welfare of the home. The effects of the tariff and of changing and of discriminating railroad rates are felt, especially, in the home. All these subjects lend themselves to a treatment from the point of view of the household, and in turn the home experience furnishes numberless illustrations of the broader economic principles.

City government and a growing portion of state and national government is but household economics writ large. When boys and girls are taught better to master the problems of economy in the home, they will be prepared better to understand the problems of economy in the state and in the nation. If this is so, the institution of the family, instead of becoming of less and less importance, will grow more and more important as the nursery of citizens and as a training place for the civic virtues. There is therefore need for the worker in household economics to see her problem in its larger relations, to understand the home in the light of general economic principles; but there is likewise need that general economic study should utilize more fully the experience in the family life and in the home economy.

## SOME FEATURES OF NUTRITION DURING GROWTH.<sup>1</sup>

DR. LAFAYETTE B. MENDEL.

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The art of feeding during infancy and childhood has been practiced so many generations with obvious success that a physiologist may well hesitate to venture in any new direction in this domain. Notwithstanding this, the most superficial student of dietary habits must perceive that the science of nutrition has meanwhile advanced with great strides. In speaking of the changing attitude towards science, a recent writer has remarked:

It is not merely that every day some obvious assumption is compelled to give way before some critical finding of science; but that every day we greet these, our own conquests, with incredulity. True, in regions to which we are entire strangers—that is, in regions where there are no first impressions to be corrected—we turn a gracious face upon the critical findings of science—hail them afar with even premature credulity; but not so in the places where we take our walks and transact our daily affairs. Toward radium and the X-ray, it is true, we are all smiles. They are new and astonishing, but not impertinent. They do not contradict us. When, however, we are told that the earth on which our feet are flatly planted is not flat; that the sun which we see daily traversing the sky does not traverse the sky; that the colors which we behold plastered all over the objective world are not in the objective world at all; that laziness (at least among the poor whites of the South), which so often gets on our nerves and gives us an excuse for abusing somebody, is not a mere human contrariety—then it is that our patience oozes out; and then it is that the following series of manifestations occurs: Ridicule; then wrath; then persecution; then sullen reticence; then a listless acquiescence in the inevitable; then the sprightly declaration that “we always knew it anyhow;” finally, a redoubled confidence that we can never be fooled again.<sup>2</sup>

Our knowledge of nutritional processes has at length become emancipated from the bonds of empiricism and custom, and has grown with

<sup>1</sup>A talk at the Conference on Homes, in connection with the Child Welfare Exhibit, New York City, January 18, 1911.

<sup>2</sup>H. W. Fisher: *Making Life Worth While*, p. 4.

the search for the why and wherefore of the practices in feeding. Dietary habits no longer rule with the authority of inherited prejudices; and the spirit of inquiry, which is dominating almost every field of human thought and endeavor, is beginning to make its influence felt in connection with the food problems of man. To those who welcome this new era, it is encouraging to note the readiness with which the ideas of to-day find acceptance. A spirit of open-mindedness has been cultivated. From an attitude of stubborn indifference to the new, our peoples are swinging to the other extreme of an over-readiness to accept the latest suggestion of the hour without criticism and to adopt it with a kind of blind faith which leads to faddishness.

The period through which we are passing is perhaps not characterized more by the additions to our store of facts than by the newer methods of approaching the questions which beset us. Some of you who are older will recall your first lesson in geography in which the introductory didactic assurance was given that the earth is "round like a ball,"—or perhaps an apple, to make the comparison more vivid. How strong was our faith in those days! Few indeed could justify the first lesson in terms of their own experience. To-day all this has changed; and the study of method in teaching has assumed an importance second only to the subject itself.

In the study of nutrition, too, the physiologist is prepared to admit the wisdom and efficiency of many—possibly most—of our dietetic customs; not, however, until he has sought to justify them on the basis of sound scientific reasoning. If we begin our dinner with soup or a relish as our forefathers did, the physiological justification for the practice is now forthcoming. The virtues of the extract of meat may remain, even though they are clothed in a new significance and no longer expressed in terms of concentrated nutriment.

If one is justified in adding a word to-day to the many which have been written on the subject of nutrition in early life, it is because emphasis has more properly been laid of late upon two important features. One of these is that the needs of the *growing* organism are distinctly different from those of the full grown adult for whom maintenance is the factor of primary import. The other feature is the introduction of the experimental method in which observation and trial in the laboratory and clinic give the true criterion for the validity of our dietetic theories. The earlier attempts to improve the artificial nutrition of infants by adapting cow's milk in quantitative imitation



of human milk failed to fulfill all that was expected of them because they were based upon analogy rather than scientific investigation.

What, then, are the nutritive peculiarities which distinguish the period of growth? The supply of energy in the form of food must be bountifully measured to cover the needs of the growing parts as well as the ordinary physiological functions. New cells and tissues are to be added; and for these, food material is necessary as well as for the routine activities. I fancy that this extra need of energy in the form of building materials for the growing body is quite adequately appreciated; one aspect of it has not yet received the attention which it deserves. It is not a matter of indifference to the growing child whether this energy for growth is furnished in one form or another. The adult can burn any fuel—protein, fat, or carbohydrate—to keep his machinery in action. But every gram of new bone calls for salts of calcium; every ounce of new blood means the addition of iron to the body's equipment; every new cell demands a contribution of specific chemical constituents. It is the problem of nutrition during growth to provide each one of these individual components in whatever form it is needed and in so far as it cannot be synthesized within the body's own laboratories.

Precisely here it is that too often artificial—and at times even natural—nutrition fails. The consequences of some of these deficiencies, as exemplified in rickets and anaemia, are well known. Many of them are far more subtle and equally far reaching. The inorganic salts or so-called mineral nutrients, too often entirely overlooked in any consideration of the dietary, not only supply essential constructive material for the cells, but they are indispensable for a normal functioning of the nervous and muscular system.

It may be worth while to devote a few words to the newer knowledge which investigation in this field has contributed. Body weight declines from the moment that the inorganic salts are excluded from the food intake, even though the other nutrients are supplied in abundance. The water-balance of the body—the elimination or retention of water—is notably influenced by specific elements (ions); and individual ions such as sodium and calcium may be antagonistic to each other in such effects. So little as one gram (15 grains) of common salt fed to a sick infant may induce rise of temperature. Salts of potassium tend to raise and salts of calcium to depress temperature in infants (L. F. Meyer). Pulse and temperature can readily be affected

in infants by variations in the salt intake, so that the expression "salt-fever" has become current in clinical practice. The activity of the army of scavengers known as leucocytes is directly influenced by the salt intake. One can easily picture to himself a train of dire consequences following upon the omission or deficiency of a single element like calcium from the dietary. Some of the commonest foods of early life, such as wheat bread, meat and potatoes, are deficient in this very element. Enough has been said to indicate that so-called "calorie" feeding has manifest limitations which fortunately are less conspicuous in the period where milk, a food almost ideal in composition, forms the chief article of diet.

A well known German paediatrist, speaking of the difficulties of infant feeding, lately remarked: "Nutrition is beset with dangers from two sides: Overnutrition is its Scylla, and undernutrition its Charybdis." Those who appreciate how much has been done in recent years, especially in the United States, to determine the actual food requirements of adult man, will be gratified to learn that progress along similar lines has now been instituted in the study of infants in Germany. The respiration calorimeter—almost a household word to-day—has been admirably adapted to the investigation of infants and the researches have indicated the energy requirement to be high in proportion to body weight in comparison with the adult, but uniform in relation to the surface area of the individual. The crucial point is illustrated by the following data:<sup>1</sup>

| AGE OF CHILD. | WEIGHT.       | SURFACE.           | CO <sub>2</sub> EXCRETION. |                      |
|---------------|---------------|--------------------|----------------------------|----------------------|
|               |               |                    | Per kilo and hour.         | Per sq. m. and hour. |
| <i>Days.</i>  | <i>Grams.</i> | <i>Sq. Meters.</i> | <i>Grams.</i>              | <i>Grams.</i>        |
| 144           | 5790          | 0.3840             | 0.913                      | 13.78                |
| 284           | 8450          | 0.4963             | 0.831                      | 13.99                |
| 380           | 8930          | 0.5150             | 0.785                      | 13.49                |

It may not be amiss to point out another lesson from the proportionality of metabolism to the extent of body surface. The hidden truth here of course lies in the fact that heat losses and temperature regulation are determined by the extent of body surface rather than by volumes or weights of tissue. The undue exposure of children in

<sup>1</sup>Schlossmann: *Arch. Kinderheilk.*, vol. 53.

parts ordinarily protected with clothing must operate to a certain extent to increase the metabolism of the individual when the external temperature is not exceptionally high. The bared legs of children offer an area of cooling equivalent to no insignificant part of the entire trunk. Viewed in this light the practice of wearing short socks ought to be adopted only with a considerable conservatism and good judgment, particularly in the case of delicate individuals.

In reviewing the methods of infant feeding which have been current during the past decade or two it is interesting to note the "changes in fashion," if the successive favorite practices may so be designated. Percentage feeding, so long conspicuous as a distinctive American contribution to food fashions, is giving way to the essentially German routine in which the specific character of the individual nutrients offered is of far greater moment than the relative proportion in which they are fed. Casein, which was once charged with many of the ills to which the infant digestive tract is subject, has lost its terrors. To-day the fats, to-morrow the sugar of milk may become the offending member of the diet.

The gratifying feature of this confusing alternation of difficulties is the fact that the dietitian is learning to distinguish more accurately between the various symptoms of indigestion and malnutrition. The curdy flocks in the stools of the sick infant are not necessarily undigested curds; they may be soaps of lime or flocks of mucus. Fermentative conditions in the alimentary tracts are no longer charged to the bacterial decomposition of proteins alone; the carbohydrates of the diet may be equally well at fault. This discriminating intelligence, based on careful observation and a more thorough knowledge of the role of digestion in nutrition, has greatly extended the possibilities of the rational feeding of the young. Malt soup and carrot soup, buttermilk and vegetable oils, barley and bean meals are illustrations of novelties which have been introduced in this way. The dietaries have been widened and the food of the day adapted to the indications of the hour. The time has arrived when the physician no longer hesitates to eliminate all food for a time in conditions of collapse due to defective alimentation—to food intoxication, as it has been called. The offended stomach and intestine and other nutritive organs are now-a-days permitted to recover from the prolonged insults of undigested food in the restful quiet of temporary starvation. Individuality in dietetic treatment has become the password to success.

In addition to the growth requirements a further peculiarity of the young lies in the possibility of an incomplete equipment of those agencies which contribute to perfect nutrition in the fullgrown. For example, the folly of offering starch to an individual whose secretions may not yet be developed to digest it, is obvious. Less appreciated is the objectionable oversupply of water to young infants in particular. Large volumes of dilute nutriment are habitually administered without the slightest consideration of the physiological work which this entails. The circulatory organs and kidneys are continually taxed to transport water and eliminate an exceedingly dilute urine. Heat is necessary to dissipate part of the water in the form of vapor from the lungs. An unnecessary loss of essential inorganic salts through the prolonged water diuresis is not beyond the bounds of probability. One of our foremost paediatrists has not hesitated to emphasize these facts.

"Even human milk," he says, "is rich enough in water to produce an exceedingly dilute urine. There is certainly no lack of water in the milk; yet quantities of water, far exceeding those in breast feeding, are often administered in the guise of artificial food. There is no reason for attributing anything either necessary or helpful to this surfeit of water. To-day we know what the water-needs of the infant are; and the question of the concentration of its food will require more consideration in the dietetics of the future."

There comes a period early in the life of every child when an extension in the range of the dietary becomes imperative. The paucity of food-ideas in the case of some parents is almost painful. Every prejudice, be it inherited or recently acquired, is brought into play to diminish the possibilities of liberal variety and wholesome choice. I know that some of my views in this connection will be charged with the flavor of faddishness. It matters not, so long as they encourage a few new experiments and dispel the fear of all that is unorthodox in feeding traditions. The mention of the banana as a food for young children still strikes terror into the heart of many parents. "What!" they say, "do you expect me to feed to this little child an indigestible bit of fruit which even I can barely tolerate?" I have often wondered at this widespread misapprehension. The ripe banana is as nearly free from bacteria beneath the skin layer as any fruit or vegetable which is available. In the process of ripening, its 20 per cent content of starch is rapidly and almost completely converted into soluble



carbohydrates, mostly sugars. The content of protein and fat is insignificant; while the cellulose is present in the form of loose shreds, which readily pass through the alimentary canal without causing irritation and which may even contribute a desirable volume and consistency to the contents. The shreds adhering to the inner peel should always be removed. The banana is cheap, everywhere available at most seasons of the year, and can be prepared in a variety of palatable ways for consumption. Perhaps the fear of the banana is in good part attributable to the irrational way in which many grown-ups eat this fruit. They decline to eat this fruit unless it is unripe and still green, often in the delusive belief that the characteristic blackening of the ripe fruit is a sign of actual decay. Yet who would eat green apples and expect immunity? Or again the adult delivers the entire banana to his innocent stomach in two or three bolted chunks, oblivious of the simplest requirements of mastication which the smallest child does not neglect. The story of the banana might be repeated in a statement of the prejudice against prunes and other fruits, against carrots and spinach and a host of foods which lend effective variety to the dietary, provided that they are furnished in suitable form. How welcome must such diversity be to a child such as I lately saw fed upon crackers, custard, and cocoa, by a "dietetically helpless" mother.

The rapid growth in popular knowledge of common foods will soon modify all this. Conferences like the present one can help to hasten the progress. In our enthusiasm for greater possibilities in the uses of foods we must not overlook or minimize the idiosyncrasy which an occasional individual may exhibit towards some widely used article of diet. Milk, eggs, fish, berries—even cereals may be included in the list. The skin rashes with which children respond to certain of these products are familiar. With others distinct alimentary symptoms may supervene. This hypersusceptibility is already forming the subject of serious study. Its occurrence is unquestionable and must be reckoned with.

If I have dwelt in a rather cursory way upon some unrelated features of nutrition in growth it has been with the hope, above all, of diverting your view-point from the requirements of the adult to those which are peculiar to the developing child. The privileges of investigation carry with them an obligation to make its contributions a part of the general store of knowledge and to apply them in useful practices.

## INSTITUTIONS IN THE UNITED STATES GIVING INSTRUCTION IN HOME ECONOMICS.

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There are in the United States over one hundred colleges and universities or other institutions of collegiate grade which give courses in Home Economics. Of this number the colleges of agriculture and mechanic arts, or so-called land-grant colleges, established by act of Congress in each of the States, constitute the largest group offering four-year courses leading to the usual academic degrees. The courses vary considerably in their character and extent but in the main represent a reasonably high standard.

Such work under a variety of names is also included in the curricula of a great number of normal schools and high schools.

The information included in the summary here presented has been compiled from a card index of institutions, including normal schools and high schools as well as institutions of collegiate grade, giving instruction in Home Economics which is maintained in the Agricultural Education Service of the Office of Experiment Stations as a part of its regular work. Generally speaking, it includes only those institutions which have furnished definite information regarding their courses as a result of correspondence with them. In a few cases the data desired have been obtained in some other way.

As regards colleges and other institutions this compilation comprises 32 land-grant institutions, 102 collegiate institutions not receiving Federal aid, 102 normal schools, 64 secondary schools receiving state aid for instruction in agriculture and Home Economics, besides 634 other high schools, 12 special domestic science schools, 24 industrial schools, 26 institutions for defectives and dependents, and 26 part-time schools, all for white students.

Four-year courses leading to degrees are offered by 27 of the 32 land-grant institutions. Instruction in Home Economics for teachers is offered by 22 of the 32 land-grant institutions, by 23 of the other collegiate institutions, and by 3 of the special domestic science schools.

Twelve of the land-grant institutions also give instruction in this subject to teachers in their summer sessions. The agricultural colleges in Michigan and New York offer home reading courses in Home Economics, and the Pennsylvania, Wisconsin and Wyoming agricultural colleges and the School of Education of the University of Chicago offer correspondence courses. There are also two special Household Economics correspondence schools in Illinois.

There are also 16 land-grant institutions (of secondary grade) and 69 secondary and elementary institutions not receiving Federal aid for negroes, and 137 secondary and elementary schools for Indians. Of the 16 land-grant institutions for negroes, 9 offer some training for teachers in Home Economics, and of about 20 negro collegiate institutions listed, 6 give such training.

The grand total of institutions known to be giving instruction in Home Economics in the United States is, therefore, over 1200, and there are undoubtedly many others doing similar work.

The writer will be glad to receive corrections and additions to the following list:

## I. INSTITUTIONS FOR WHITE STUDENTS.

### 1. COLLEGIATE INSTITUTIONS.

#### *A. Collegiate Institutions Receiving Aid from the Federal Government.*

| STATE OR TERRITORY | NAME OF INSTITUTION                  | LOCATION             | PRESIDENT         |
|--------------------|--------------------------------------|----------------------|-------------------|
| Colorado.....      | State Agr. College                   | Fort Collins         | C. A. Lory        |
| Connecticut.....   | Conn. Agr. College                   | Storrs               | C. L. Beach       |
| Idaho .....        | University of Idaho                  | Moscow               | J. A. MacLean     |
| Illinois.....      | University of Illinois               | Urbana               | E. E. James       |
| Indiana .....      | Purdue University                    | Lafayette            | W. E. Stone       |
| Iowa.....          | Iowa State College                   | Ames                 | E. W. Stanton     |
| Kansas.....        | Kansas State Agr. College            | Manhattan            | H. J. Waters      |
| Kentucky.....      | State University                     | Lexington            | J. G. White       |
| Maine.....         | University of Maine                  | Orono                | R. J. Aley        |
| Massachusetts..    | Mass. Agr. College                   | Amherst              | K. L. Butterfield |
| Michigan.....      | Mich. State Agr. College             | Agr. College         | J. L. Snyder      |
| Minnesota.....     | University of Minnesota              | St. Paul             | G. E. Vincent     |
| Missouri.....      | University of Missouri               | Columbia             | A. R. Hill        |
| Montana.....       | Montana Agr. College                 | Bozeman              | J. M. Hamilton    |
| Nebraska.....      | University of Nebraska               | Lincoln              | Samuel Avery      |
| Nevada.....        | University of Nevada                 | Reno                 | J. E. Stubbs      |
| New Mexico ..      | N. M. College of Agr. and Mech. Arts | Agricultural College | W. E. Garrison    |

| STATE OR TERRITORY | NAME OF INSTITUTION       | LOCATION      | PRESIDENT      |
|--------------------|---------------------------|---------------|----------------|
| New York .....     | Cornell University        | Ithaca        | J. G. Schurman |
| North Dakota ..    | N. D. Agr. College        | Agr. College  | J. H. Worst    |
| Ohio .....         | Ohio State University     | Columbus      | J. O. Thompson |
| Oklahoma .....     | Okla. A. and M. College   | Stillwater    | J. H. Connell  |
| Oregon .....       | Oregon State Agr. College | Corvallis     | W. J. Kerr     |
| Pennsylvania ..    | Penn. State College       | State College | E. E. Sparks   |
| Rhode Island...    | R. I. State College       | Kingston      | Howard Edwards |
| South Dakota ..    | S. D. State College       | Brookings     | R. L. Slagle   |
| Tennessee .....    | University of Tennessee   | Knoxville     | Brown Ayres    |
| Utah .....         | Agr. College of Utah      | Logan         | J. A. Widtsoe  |
| Vermont .....      | University of Vermont     | Burlington    | M. H. Buckham  |
| Washington ....    | State College of Wash.    | Pullman       | E. A. Bryan    |
| West Virginia ..   | West Virginia University  | Morgantown    | D. B. Purinton |
| Wisconsin .....    | University of Wisconsin   | Madison       | C. R. Van Hise |
| Wyoming .....      | University of Wyoming     | Laramie       | C. O. Merica   |

*B. Collegiate Institutions not Receiving Aid from the Federal Government.*

| STATE OR TERRITORY | NAME OF INSTITUTION                         | LOCATION            |
|--------------------|---------------------------------------------|---------------------|
| Alabama .....      | Athens College (for women)                  | Athens              |
|                    | Florence University for Women               | Florence            |
| Arkansas .....     | Henderson College                           | Arkadelphia         |
|                    | Cogswell Polytechnical College              | San Francisco       |
| California ....    | Dominican College                           | San Rafael          |
|                    | Mills College                               | Mills College       |
|                    | Leland Stanford Junior University           | Stanford University |
| Colorado .....     | Woman's College                             | Denver              |
|                    | Colorado Woman's College                    | Montclair           |
| Connecticut ....   | The Hartford School of Religious Pedagogy   | Hartford            |
|                    | John B. Stetson University                  | DeLand              |
| Florida .....      | Southern College                            | Sutherland          |
|                    | State College for Women                     | Tallahassee         |
|                    | School of D. and I. Arts of Rollins College | Winter Park         |
| Georgia .....      | Atlanta University                          | Atlanta             |
|                    | Bessie Tift College                         | Forsyth             |
|                    | Brenau College                              | Gainesville         |
| Idaho .....        | College of Idaho                            | Caldwell            |
|                    | Illinois Wesleyan University                | Bloomington         |
|                    | Lewis Institute                             | Chicago             |
| Illinois .....     | University of Chicago                       | Chicago             |
|                    | James Millikin University                   | Decatur             |
|                    | Northwestern University                     | Evanston            |
|                    | Ewing College                               | Ewing               |



| STATE OR<br>TERRITORY | NAME OF INSTITUTION                                                         | LOCATION        |
|-----------------------|-----------------------------------------------------------------------------|-----------------|
| Illinois.....         | Illinois Woman's College                                                    | Jacksonville    |
|                       | St. Mary's School                                                           | Knoxville       |
|                       | Ferry Hall                                                                  | Lake Forest     |
|                       | Lincoln College of James Millikin Univ.                                     | Lincoln         |
|                       | McKendree College                                                           | Lebanon         |
|                       | Bradley Polytechnic Institute                                               | Peoria          |
|                       | Rockford College                                                            | Rockford        |
|                       | Bettie Stuart Institute                                                     | Springfield     |
|                       | Wheaton College                                                             | Wheaton         |
| Indiana.....          | Earlham College                                                             | Earlham         |
|                       | St. Mary's College and Academy                                              | Notre Dame      |
|                       | Winona College of Agriculture                                               | Winona Lake     |
| Iowa.....             | Drake University                                                            | Des Moines      |
|                       | Humboldt College                                                            | Humboldt        |
|                       | Lenox College                                                               | Hopkinton       |
| Kansas.....           | Midland College                                                             | Atchison        |
|                       | Highland University                                                         | Highland        |
|                       | University of Kansas                                                        | Lawrence        |
| Kentucky....          | Berea College                                                               | Berea           |
|                       | State University                                                            | Louisville      |
| Louisiana....         | H. Sophie Newcomb Memorial College<br>(girls' college of Tulane University) | New Orleans     |
| Maryland....          | National Park Seminary                                                      | Forest Glen     |
|                       | Woman's College                                                             | Frederick       |
|                       | Lasell Seminary                                                             | Auburndale      |
| Massachusetts         | Simmons College                                                             | Boston          |
|                       | Northfield Seminary                                                         | East Northfield |
|                       | Hill Institute                                                              | Florence        |
|                       | Woodward Institute                                                          | Quincy          |
| Michigan.....         | Hillsdale College                                                           | Hillsdale       |
| Minnesota...          | Albert Lea College for Women                                                | Albert Lea      |
|                       | North Star College                                                          | Warren          |
| Mississippi..         | Miss. Industrial Institute and College                                      | Columbus        |
|                       | Meridian Woman's College                                                    | Meridian        |
|                       | Port Gibson Female College                                                  | Port Gibson     |
|                       | Stephens College                                                            | Columbia        |
| Missouri.....         | Cottey College                                                              | Nevada          |
|                       | Lindenwood College for Women                                                | St. Charles     |
| Nebraska.....         | University of Omaha                                                         | Omaha           |
| New Jersey.....       | College of St. Elizabeth                                                    | Convent Station |
| New Mexico...         | University of New Mexico                                                    | Albuquerque     |
| New York....          | Lady Jane Grey School                                                       | Binghamton      |
|                       | Pratt Institute                                                             | Brooklyn        |
|                       | Fort Edward Collegiate Institute (for girls)                                | Fort Edward     |
|                       | Bennett School for Girls                                                    | Millbrook       |

| STATE OR TERRITORY   | NAME OF INSTITUTION                         | LOCATION         |
|----------------------|---------------------------------------------|------------------|
| New York . . . . .   | College of St. Angela                       | New Rochelle     |
|                      | Teachers' College of Columbia University    | New York         |
|                      | Vassar College                              | Poughkeepsie     |
|                      | Woman's Institute                           | Yonkers          |
| North Carolina . .   | Salem Academy and College                   | Winston-Salem    |
| North Dakota . .     | University of North Dakota                  | University P. O. |
| Ohio . . . . .       | Oxford College for Women                    | Oxford           |
|                      | Western College for Women                   | Oxford           |
|                      | Lake Erie College                           | Painesville      |
| Oklahoma . . . . .   | Okla. Ind. Inst. and College for Girls      | Chickasha        |
|                      | State University                            | Norman           |
|                      | Blairsville College (Woman's College)       | Blairsville      |
| Pennsylvania . . .   | Elizabethtown College                       | Elizabethtown    |
|                      | Temple University                           | Philadelphia     |
|                      | Drexel Institute                            | Philadelphia     |
| Porto Rico . . . . . | University of Porto Rico                    | Rio Piedras      |
| Rhode Island . . .   | Brown University, Woman's College           | Providence       |
| South Carolina . .   | Benedict College                            | Columbia         |
|                      | Washington and Tusculum College             | Greensville      |
|                      | Carson and Newman College                   | Jefferson City   |
|                      | Nashville Agricultural and Normal Institute | Madison          |
| Tennessee . . . . .  | Belmont College                             | Nashville        |
|                      | Burritt College                             | Spencer          |
|                      | College of Industrial Arts                  | Denton           |
| Texas . . . . .      | Brigham Young College                       | Logan            |
|                      | Brigham Young University                    | Provo            |
|                      | University of Utah                          | Salt Lake City   |
| Vermont . . . . .    | I. D. S. University                         | Salt Lake City   |
|                      | Middlebury College                          | Middlebury       |
|                      | Eastern College                             | Manassas         |
| Virginia . . . . .   | Sweet Briar College                         | Sweet Briar      |
|                      | University of Washington                    | Seattle          |
| Washington . . . .   | Milton College                              | Milton           |
| Wisconsin . . . . .  | Milwaukee-Downer College                    | Milwaukee        |

## 2. SECONDARY INSTITUTIONS.

*A. Normal Schools.*

| STATE OR TERRITORY   | NAME OF INSTITUTION                                          | LOCATION       |
|----------------------|--------------------------------------------------------------|----------------|
| Alabama . . . . .    | Normal Department, Polytechnic College and Ladies' Institute | Cullman        |
|                      | State Normal College                                         | Florence       |
|                      | State Normal School                                          | Jacksonville   |
|                      | Lincoln Normal School                                        | Marion         |
| Arizona . . . . .    | Temple Normal School                                         | Tempe          |
| California . . . . . | State Normal School                                          | Los Angeles    |
|                      | State Normal School                                          | San Diego      |
|                      | State Normal School of Manual Arts and Home Economics        | Santa Barbara  |
| Colorado . . . . .   | State Normal School                                          | Greeley        |
| Georgia . . . . .    | State Normal School                                          | Athens         |
|                      | Georgia Normal and Industrial College.                       | Milledgeville  |
|                      | Allen Normal and Industrial School                           | Thomasville    |
| Idaho . . . . .      | State Normal School                                          | Albion         |
|                      | State Normal School                                          | Lewiston       |
|                      | Southern Illinois State Normal University                    | Carbondale     |
| Illinois . . . . .   | Chicago Normal School                                        | Chicago        |
|                      | Technical Normal School                                      | Chicago        |
|                      | Northern Illinois State Normal School                        | De Kalb        |
|                      | Western Illinois State Normal School                         | Macomb         |
|                      | State Normal University                                      | Normal         |
| Indiana . . . . .    | Indianapolis Normal School.                                  | Indianapolis   |
| Iowa . . . . .       | State Teachers' College.                                     | Cedar Falls    |
|                      | State Normal School                                          | Emporia        |
| Kansas . . . . .     | State Normal School                                          | Hays           |
|                      | Kansas State M. T. Normal School                             | Pittsburg      |
| Kentucky . . . . .   | Western Kentucky State Normal School                         | Bowling Green  |
| Louisiana . . . . .  | State Normal School                                          | Natchitoches   |
| Maryland . . . . .   | Baltimore Teachers Training School                           | Baltimore      |
|                      | Boston Normal School.                                        | Boston         |
|                      | State Normal School                                          | Fitchburg      |
| Massachusetts        | State Normal School                                          | Framingham     |
|                      | State Normal School                                          | Hyannis        |
|                      | State Normal School                                          | North Adams    |
|                      | State Normal School                                          | Worcester      |
|                      | Thomas Normal Training School                                | Detroit        |
| Michigan . . . . .   | Western State Normal School                                  | Kalamazoo      |
|                      | Northern State Normal School                                 | Marquette      |
|                      | Central State Normal School                                  | Mount Pleasant |
|                      | State Normal College                                         | Ypsilanti      |

| STATE OR<br>TERRITORY    | NAME OF INSTITUTION                      | LOCATION       |
|--------------------------|------------------------------------------|----------------|
| Minnesota....            | State Normal School                      | Duluth         |
|                          | State Normal School                      | Mankato        |
|                          | State Normal School                      | Moorhead       |
|                          | State Normal School                      | St. Cloud      |
|                          | State Normal School                      | Winona         |
| Missouri.....            | Cape Girardeau Normal School             | Cape Girardeau |
|                          | Missouri State Normal School             | Warrensburg    |
|                          | State Normal School                      | Kearney        |
| Nebraska.....            | Nebraska State Normal School             | Peru           |
|                          | Wayne Normal College                     | Wayne          |
| New Mexico..             | New Mexico Normal University             | Las Vegas      |
|                          | Normal School                            | Silver City    |
|                          | Teachers' Training School                | Auburn         |
|                          | State Normal School                      | Brockport      |
| New York....             | State Normal and Training School         | Cortland       |
|                          | State Normal School                      | New Paltz      |
|                          | New York Training School for Teachers    | New York City  |
|                          | State Normal School                      | Oneonta        |
|                          | N. Y. State Normal and Training School   | Oswego         |
|                          | Rochester Training School                | Rochester      |
| North Caro-<br>lina..... | Normal and Collegiate Institute          | Asheville      |
|                          | State Normal and Industrial College      | Greensboro     |
|                          | East Carolina Teachers' Training School  | Greenville     |
|                          | N. D. State Normal Industrial School     | Ellendale      |
| North Dakota             | State Normal School                      | Mayville       |
|                          | State Normal School                      | Valley City    |
| Ohio.....                | North Dakota School of Science           | Wahpeton       |
|                          | Oberlin Summer School of Methods         | Oberlin        |
|                          | State Normal College of Miami Univ.      | Oxford         |
|                          | East-Central State Normal School         | Ada            |
| Oklahoma....             | Northwestern State Normal School         | Alva           |
|                          | Southeastern State Normal School         | Durant         |
|                          | Central State Normal School              | Edmond         |
|                          | Northeastern State Normal School         | Tahlequah      |
|                          | Southwestern State Normal School         | Weatherford    |
| Philippines....          | Philippine Normal School                 | Manila         |
| Rhode Island..           | Rhode Island Normal School               | Providence     |
| South Carolina           | Memminger Normal School                  | Charleston     |
|                          | Winthrop Normal and Industrial College   | Rock Hill      |
| South Dakota..           | Northern Normal and Industrial School    | Aberdeen       |
|                          | State Normal School                      | Madison        |
| Tennessee.....           | Morristown Normal and Industrial College | Morristown     |
| Texas.....               | West Texas State Normal School           | Canyon         |
|                          | North Texas State Normal College         | Denton         |
|                          | Sam Houston Normal Institute             | Huntsville     |



| STATE OR TERRITORY | NAME OF INSTITUTION                                                  | LOCATION        |
|--------------------|----------------------------------------------------------------------|-----------------|
| Utah.....          | Southern Branch of the State Normal School of the University of Utah | Cedar City      |
|                    | State Normal School                                                  | Salt Lake City  |
| Vermont.....       | State Normal School                                                  | Castleton       |
|                    | State Normal School                                                  | Johnson         |
|                    | State Normal School                                                  | Randolph Center |
| Virginia.....      | McKinley Normal and Ind. School                                      | Alexandria      |
| Virginia.....      | State Female Normal School                                           | Farmville       |
|                    | State Normal and Ind. School for Women                               | Fredericksburg  |
| Washington..       | State Normal and Industrial School                                   | Harrisonburg    |
|                    | State Normal School                                                  | Bellingham      |
|                    | State Normal School                                                  | Cheney          |
|                    | State Normal School                                                  | Ellensburg      |
|                    | Stout Institute                                                      | Menomonie       |
| Wisconsin ....     | La Crosse County Normal School                                       | Onalaska        |
|                    | State Normal School                                                  | Oshkosh         |
|                    | Sauk County Normal School                                            | Reedsburg       |
|                    | Normal School                                                        | Stevens Point   |
|                    | State Normal School                                                  | Superior        |

*B. Secondary Schools Receiving State Aid for Agriculture and Domestic Science.*

| STATE OR TERRITORY | NAME OF INSTITUTION                        | LOCATION        |
|--------------------|--------------------------------------------|-----------------|
| Alabama .....      | Marengo County High School                 | Thomaston       |
|                    | Fifth District Agricultural School         | Wetumpka        |
| Arkansas.....      | Third District Agricultural School         | Magnolia        |
|                    | Fourth District Agricultural School        | Monticello      |
|                    | Second District Agricultural School        | Russellville    |
| California.....    | California Polytechnic School              | San Luis Obispo |
| Georgia.....       | Third District Industrial and Agr. School  | Americus        |
|                    | Sixth District Industrial and Agr. School  | Barnesville     |
|                    | Fourth District Industrial and Agr. School | Carrollton      |
|                    | Ninth District Industrial and Agr. School  | Clarksville     |
|                    | Eleventh District Ind. and Agr. School     | Douglas         |
|                    | Tenth District Industrial and Agr. School  | Granite Hill    |
|                    | Fifth District Industrial and Agr. School  | Monroe          |
|                    | Seventh District Ind. and Agr. School      | Powder Springs  |
|                    | First District Industrial and Agr. School  | Statesboro      |
| Louisiana.....     | Second District Industrial and Agr. School | Tifton          |
|                    | Arcadia High School                        | Arcadia         |
|                    | Bunkie Agricultural High School            | Bunkie          |

| STATE OR TERRITORY | NAME OF INSTITUTION                                              | LOCATION     |
|--------------------|------------------------------------------------------------------|--------------|
| Louisiana.....     | Dodson Agricultural High School                                  | Dodson       |
|                    | Oak Grove Agricultural High School                               | Hope Villa   |
|                    | First Ward Consolidated School                                   | Jacoby       |
|                    | Bellevue Agricultural High School                                | Leesville    |
|                    | Merryville Agricultural High School                              | Merryville   |
| Maryland.....      | Stonewall Agricultural High School                               | Stonewall    |
|                    | Agricultural High School                                         | Philopolis   |
| Massachusetts      | Montague Agricultural School                                     | Montague     |
|                    | Smith's Agricultural School and Northampton School of Industries | Northampton  |
|                    | Petersham Agricultural High School                               | Petersham    |
| Michigan.....      | Menominee County School of Agriculture and Domestic Economy      | Menominee    |
|                    | High School                                                      | Albert Lea   |
| Minnesota....      | High School                                                      | Alexandria   |
|                    | Canby High School                                                | Canby        |
|                    | High School                                                      | Cokato       |
|                    | High School                                                      | Crookston    |
|                    | Crookston School of Agriculture                                  | Crookston    |
|                    | Glencoe High School                                              | Glencoe      |
|                    | High School                                                      | Hinckley     |
|                    | High School                                                      | McIntosh     |
|                    | School of Agriculture of Minnesota Univ.                         | Morris       |
|                    | High School                                                      | Wells        |
| Mississippi....    | Bay Springs Agricultural School                                  | Bay Springs  |
|                    | N. Y. School of Agriculture at Alfred Univ.                      | Alfred       |
| New York....       | N. Y. State School of Agr., St. Lawrence University              | Canton       |
|                    | Haskell State School of Agriculture                              | Broken Arrow |
| Oklahoma....       | Panhandle Agricultural Institute                                 | Goodwell     |
|                    | Connell State School of Agriculture                              | Helena       |
|                    | Cameron State School of Agriculture                              | Lawton       |
|                    | Murray State School of Agriculture                               | Tishomingo   |
|                    | Connors State School of Agriculture                              | Warner       |
| Texas.....         | Tuleta Agricultural High School                                  | Tuleta       |
|                    | Tenth District Agricultural High School                          | Appomattox   |
|                    | Longyear High School                                             | Burkeville   |
|                    | Agricultural High School                                         | Chester      |
|                    | Agricultural High School                                         | Driver       |
| Virginia.....      | Elk Creek Training School                                        | Elk Creek    |
|                    | Agricultural High School                                         | Hampton      |
|                    | Agricultural High School                                         | Lebanon      |
|                    | Agricultural High School                                         | Manassas     |
|                    | Agricultural High School                                         | Middletown   |

| STATE OR TERRITORY | NAME OF INSTITUTION                                         | LOCATION   |
|--------------------|-------------------------------------------------------------|------------|
| Wisconsin . . . .  | Marinette County School of Agriculture and Domestic Economy | Marinette  |
|                    | Dunn County School of Agriculture and Domestic Economy      | Menomonie  |
|                    | La Crosse County School of Agriculture and Domestic Economy | Onalaska   |
|                    | Marathon County School of Agriculture and Domestic Economy  | Wausau     |
|                    | Winnebago County School of Agriculture and Domestic Economy | Winneconne |
|                    |                                                             |            |

*C. High Schools Giving Courses in Home Economics.*

| STATE OR TERRITORY | NAME OF INSTITUTION          | LOCATION    |
|--------------------|------------------------------|-------------|
| Alabama . . . .    | High School                  | Almond      |
|                    | High School                  | Birmingham  |
| Arizona . . . . .  | High School                  | Bisbee      |
|                    | High School                  | Morenci     |
|                    | Union High School            | Tempe       |
| Arkansas . . . . . | High School                  | Fort Smith  |
|                    | High School                  | Little Rock |
|                    | High School                  | Auburn      |
|                    | Kern County High School      | Bakersfield |
|                    | High School                  | Berkeley    |
|                    | Snell Seminary               | Berkeley    |
|                    | Brawley Union High School    | Brawley     |
|                    | High School                  | Chino       |
|                    | High School                  | Colton      |
|                    | Compton Union High School    | Compton     |
| California . . . . | Covina Union High School     | Covina      |
|                    | Eureka High School           | Eureka      |
|                    | High School                  | Fresno      |
|                    | Fullerton Union High School  | Fullerton   |
|                    | Hollywood Union High School  | Hollywood   |
|                    | Imperial Valley Union School | Imperial    |
|                    | Union High School No. 1      | Livermore   |
|                    | Longbeach City High School   | Longbeach   |
|                    | Westlake School for Girls    | Los Angeles |
|                    | Polytechnic High School      | Los Angeles |
|                    | Gardena High School          | Los Angeles |
|                    | M. T. and Com. High School   | Oakland     |
|                    | High School                  | Ontario     |

| STATE OR<br>TERRITORY | NAME OF INSTITUTION                  | LOCATION         |
|-----------------------|--------------------------------------|------------------|
| California . . . .    | Castilleja School                    | Palo Alto        |
|                       | Throop Academy                       | Pasadena         |
|                       | Pomona City High School              | Pomona           |
|                       | Shasta County High School            | Redding          |
|                       | High School                          | Redlands         |
|                       | Richmond Union High School           | Richmond         |
|                       | San Bernardino High School           | San Bernardino   |
|                       | California School of Mechanical Arts | San Francisco    |
|                       | Irving Institute                     | San Francisco    |
|                       | Polytechnic High School              | San Francisco    |
|                       | Girls' High School                   | San Francisco    |
|                       | San Jose High School                 | San Jose         |
|                       | Ann S. C. Blake M. T. School         | Santa Barbara    |
|                       | Santa Monica City High School        | Santa Monica     |
|                       | South Pasadena City High School      | South Pasadena   |
|                       | Ventura High School                  | Ventura          |
|                       | High School                          | Watsonville      |
|                       | Whittier Union High School           | Whittier         |
|                       | Siskiyou County High School          | Yreka            |
|                       | High School                          | Alamosa          |
| Colorado . . . . .    | High School                          | Arvada           |
|                       | High School                          | Aspen            |
|                       | High School                          | Black Hawk       |
|                       | High School                          | Blanca           |
|                       | High School                          | Boulder          |
|                       | State Preparatory School             | Boulder          |
|                       | High School                          | Breckenridge     |
|                       | High School                          | Brush            |
|                       | High School                          | Canon City       |
|                       | High School                          | Central City     |
|                       | High School                          | Colorado City    |
|                       | High School                          | Colorado Springs |
|                       | High School                          | Cripple Creek    |
|                       | High School                          | Delta            |
|                       | East Side High School                | Denver           |
|                       | Manual Training School, High         | Denver           |
|                       | High School                          | Durango          |
|                       | High School                          | Eaton            |
|                       | High School                          | Edgewater        |
|                       | High School                          | Florence         |
|                       | High School                          | Fort Collins     |
|                       | High School                          | Fort Morgan      |
|                       | High School                          | Fruita           |
|                       | High School                          | Georgetown       |
|                       | High School                          | Glenwood Springs |



| STATE OR<br>TERRITORY | NAME OF INSTITUTION       | LOCATION       |
|-----------------------|---------------------------|----------------|
| Colorado . . . . .    | High School               | Golden         |
|                       | High School               | Grand Junction |
|                       | High School               | Greeley        |
|                       | High School               | Hotchkiss      |
|                       | High School               | Idaho Springs  |
|                       | High School               | La Junta       |
|                       | High School               | Lamar          |
|                       | High School               | Las Animas     |
|                       | High School               | Leadville      |
|                       | High School               | Littleton      |
|                       | High School               | Longmont       |
|                       | High School               | Louisville     |
|                       | High School               | Loveland       |
|                       | High School               | Manitou        |
|                       | High School               | Montrose       |
|                       | High School               | Monte Vista    |
|                       | High School               | New Windsor    |
|                       | High School               | Paonia         |
|                       | High School               | Palisade       |
|                       | Centennial High School    | Pueblo         |
|                       | East Side High School     | Pueblo         |
|                       | West Side High School     | Pueblo         |
|                       | Pueblo High School        | Pueblo         |
|                       | High School               | Rocky Ford     |
|                       | High School               | Salida         |
|                       | High School               | South Canon    |
|                       | High School               | Sterling       |
|                       | High School               | Telluride      |
|                       | High School               | Trinidad       |
| Connecticut . . . . . | Ely School for Girls      | Greenwich      |
|                       | High School               | Hartford       |
|                       | High School               | Naugatuck      |
|                       | High School               | New Britain    |
|                       | New Haven High School     | New Haven      |
| Dis. of Col. . . . .  | High School               | So. Manchester |
|                       | Staples High School       | Westport       |
|                       | Technical High School     | Washington     |
| Florida . . . . .     | Duvall High School        | Jacksonville   |
|                       | High School               | St. Petersburg |
|                       | High School               | Albany         |
| Georgia . . . . .     | High School               | Athens         |
|                       | Tubman High School        | Augusta        |
|                       | Piedmont College          | Demorest       |
|                       | Wesley Chapel High School | Eatonton       |
|                       | High School               | Hephzibah      |

| STATE OR<br>TERRITORY | NAME OF INSTITUTION                 | LOCATION                   |
|-----------------------|-------------------------------------|----------------------------|
| Georgia . . . . .     | Gresham High School for Girls       | Macon                      |
|                       | High School                         | Savannah                   |
| Hawaii . . . . .      | St. Andrews Priory                  | Honolulu                   |
|                       | Kamehameha Schools                  | Honolulu                   |
|                       | High School                         | Boise                      |
|                       | Idaho Falls High School             | Idaho Falls                |
|                       | High School                         | Lewiston                   |
| Idaho . . . . .       | High School                         | Moscow                     |
|                       | High School                         | Nampa                      |
|                       | Academy of Idaho                    | Pocatello                  |
|                       | Rural High School No. 1             | Rigby                      |
|                       | Jennings Seminary                   | Aurora                     |
|                       | Austin High School                  | Austin Sta., Chicago       |
|                       | Bridgeport Township High School     | Bridgeport                 |
|                       | High School                         | Cairo                      |
|                       | High School                         | Carbondale                 |
|                       | Township High School                | Centralia                  |
|                       | High School                         | Champaign                  |
|                       | High School                         | Charleston                 |
|                       | High School                         | Chicago                    |
|                       | Calumet High School                 | Chicago                    |
|                       | Curtis High School                  | Chicago                    |
|                       | Farragut High School                | Chicago                    |
|                       | Lake High School                    | Chicago                    |
|                       | Marshall High School                | Chicago                    |
|                       | Medill High School                  | Chicago                    |
|                       | Phillips High School                | Chicago                    |
| Illinois . . . . .    | University High School              | Chicago                    |
|                       | High School                         | Clinton                    |
|                       | J. Sterling Morton High School      | Clyde                      |
|                       | Woodford County Consolidated School | Congerville                |
|                       | High School                         | Danville                   |
|                       | High School                         | Decatur                    |
|                       | Township High School                | DeKalb                     |
|                       | High School                         | East Aurora                |
|                       | High School                         | East St. Louis             |
|                       | Englewood High School               | Englewood Sta.,<br>Chicago |
|                       | High School                         | Elgin                      |
|                       | High School                         | Fairbury                   |
|                       | High School                         | Freeport                   |
|                       | High School                         | Galena                     |
|                       | High School                         | Galesburg                  |
|                       | High School                         | Galva                      |
|                       | Geneseo Twp. High School            | Geneseo                    |

| STATE OR<br>TERRITORY | NAME OF INSTITUTION             | LOCATION                       |
|-----------------------|---------------------------------|--------------------------------|
| Illinois . . . . .    | Township High School            | Harrisburg                     |
|                       | Deerfield Township High School  | Highland Park                  |
|                       | High School                     | Jacksonville                   |
|                       | Township High School            | Kenilworth                     |
|                       | High School                     | Kewanee                        |
|                       | Lakeview High School            | Lakeview Sta.,<br>Chicago      |
|                       | LaSalle-Peru Twp. High School   | LaSalle                        |
|                       | Township High School            | Lexington                      |
|                       | Township High School            | Lockport                       |
|                       | McKinley High School            | McKinley Park<br>Sta., Chicago |
|                       | John Swaney Consolidated School | McNabb                         |
|                       | High School                     | Moline                         |
|                       | Township High School            | Murphysboro                    |
|                       | High School                     | Pekin                          |
|                       | High School                     | Peoria                         |
|                       | Manual Training High School     | Peoria                         |
|                       | Township High School            | Pontiac                        |
|                       | Township High School            | Princeton                      |
|                       | High School                     | Quincy                         |
|                       | High School                     | Rockford                       |
|                       | High School                     | Rock Island                    |
|                       | Roseville Township High School  | Roseville                      |
|                       | Township High School            | Savanna                        |
|                       | South Chicago High School       | South Chicago                  |
|                       | High School                     | Springfield                    |
|                       | Township High School            | Stockland                      |
|                       | Township High School            | Streator                       |
|                       | High School                     | Sycamore                       |
|                       | Township High School            | Taylorville                    |
|                       | High School                     | Urbana                         |
|                       | High School                     | Watseka                        |
|                       | Township High School            | Waukegan                       |
|                       | High School                     | West Aurora                    |
|                       | High School                     | Batesville                     |
|                       | High School                     | Evansville                     |
|                       | Fort Wayne High School          | Fort Wayne                     |
|                       | High School                     | Greenfield                     |
|                       | High School                     | Hartford City                  |
| Indiana . . . . .     | High School                     | Huntington                     |
|                       | Manual Training High School     | Indianapolis                   |
|                       | High School                     | Laporte                        |
|                       | High School                     | Marion                         |
|                       | High School                     | Mooreville                     |

| STATE OR<br>TERRITORY | NAME OF INSTITUTION          | LOCATION       |
|-----------------------|------------------------------|----------------|
| Indiana .....         | High School                  | Muncie         |
|                       | High School                  | South Bend     |
|                       | High School                  | Westfield      |
|                       | High School                  | Whiting        |
|                       | High School                  | Burlington     |
|                       | High School                  | Cedar Rapids   |
|                       | High School                  | Coin           |
|                       | High School                  | Davenport      |
|                       | High School                  | Denison        |
|                       | East High School             | Des Moines     |
| Iowa .....            | High School                  | Dubuque        |
|                       | High School                  | Iowa City      |
|                       | High School                  | Marshalltown   |
|                       | High School                  | Mason City     |
|                       | New Providence Academy       | New Providence |
|                       | High School                  | Onawa          |
|                       | High School                  | Oskaloosa      |
|                       | High School                  | Rock Valley    |
|                       | High School                  | Tipton         |
|                       | High School                  | East Waterloo  |
|                       | High School                  | What Cheer     |
|                       | High School                  | Arkansas City  |
|                       | High School                  | Atchison       |
|                       | Dickinson County High School | Chapman        |
|                       | Crawford County High School  | Cherokee       |
|                       | Cherokee County High School  | Columbus       |
|                       | Atchison County High School  | Effingham      |
| Kansas .....          | High School                  | El Dorado      |
|                       | High School                  | Emporia        |
|                       | High School                  | Eureka         |
|                       | High School                  | Fort Scott     |
|                       | High School                  | Gas City       |
|                       | High School                  | Hutchinson     |
|                       | Sumner High School           | Kansas City    |
|                       | High School                  | Marion         |
|                       | Reno County High School      | Nickerson      |
|                       | Decatur County High School   | Oberlin        |
|                       | High School                  | Ottawa         |
|                       | Salina High School           | Salina         |
|                       | High School                  | Topeka         |
|                       | Sumner County High School    | Wellington     |
|                       | High School                  | Wichita        |
|                       | High School                  | Winfield       |
| Kentucky ....         | High School                  | Covington      |
|                       | Henderson High School        | Henderson      |
|                       | Girls' High School           | Louisville     |



| STATE OR TERRITORY | NAME OF INSTITUTION                   | LOCATION        |
|--------------------|---------------------------------------|-----------------|
| Louisiana . . . .  | High School                           | Monroe          |
|                    | Isadore Newman Manual Training School | New Orleans     |
|                    | High School                           | Shreveport      |
| Maine . . . . .    | Edward Little High School             | Auburn          |
|                    | East Maine Conference Seminary        | Bucksport       |
|                    | Jordan High School                    | Lewiston        |
|                    | Parsonsfield Seminary                 | Parsonsfield    |
| Maryland . . . .   | High School                           | Sanford         |
|                    | Surratsville High School              | Clinton         |
|                    | Washington High School                | Princess Anne   |
|                    | Wicomico High School                  | Salisbury       |
|                    | High School                           | Sharptown       |
|                    | Girls' High School of Practical Arts  | Boston          |
|                    | High School                           | Brockton        |
|                    | High School                           | Brookline       |
|                    | Trade School for Girls                | Cambridge       |
|                    | High School                           | Cambridge       |
|                    | Sea Pines—A Home School for Girls     | East Brewster   |
|                    | Northfield Seminary                   | East Northfield |
|                    | High School                           | Fairhaven       |
|                    | High School                           | Hadley          |
| Massachusetts      | High School                           | Holyoke         |
|                    | High School                           | Lawrence        |
|                    | High School                           | Lowell          |
|                    | High School                           | Lynn            |
|                    | High School                           | Malden          |
|                    | High School                           | Manchester      |
|                    | High School                           | Marlboro        |
|                    | High School                           | Medford         |
|                    | High School                           | Milton          |
|                    | High School                           | Nantucket       |
|                    | Mount Ida School                      | Newton          |
|                    | High School                           | Newton          |
|                    | Newton Technical High School          | Newton          |
|                    | High School                           | So. Framingham  |
|                    | Technical High School                 | Springfield     |
|                    | High School                           | Walpole         |
|                    | High School                           | Waltham         |
|                    | High School                           | Winchester      |
|                    | High School                           | Worcester       |
| Michigan . . . .   | High School                           | Adrian          |
|                    | High School                           | Battle Creek    |
|                    | High School                           | Cadillac        |
|                    | High School                           | Coldwater       |
|                    | High School                           | Crystal Falls   |

| STATE OR<br>TERRITORY | NAME OF INSTITUTION            | LOCATION           |
|-----------------------|--------------------------------|--------------------|
| Michigan.....         | Central High School            | Detroit            |
|                       | High School                    | Eaton Rapids       |
|                       | High School                    | Escanaba           |
|                       | High School                    | Grand Rapids       |
|                       | High School                    | Hastings           |
|                       | Hillsdale High School          | Hillsdale          |
|                       | High School                    | Iron Mountain      |
|                       | High School                    | Ironwood           |
|                       | High School                    | Ishpeming          |
|                       | High School                    | Jackson            |
|                       | High School                    | Kalamazoo          |
|                       | High School                    | Lake Linden        |
|                       | High School                    | Ludington          |
|                       | High School                    | Manistee           |
|                       | High School                    | Manistique         |
|                       | High School                    | Marshall           |
|                       | High School                    | Mount Pleasant     |
|                       | High School                    | Muskegon           |
|                       | Hackley Manual Training School | Muskegon           |
|                       | High School                    | Negaunee           |
|                       | High School                    | North Adams        |
|                       | High School                    | Palesdale          |
|                       | High School                    | Saginaw, East Side |
|                       | High School                    | Sault Ste. Marie   |
| Minnesota....         | High School                    | Ada                |
|                       | High School                    | Akely              |
|                       | High School                    | Anoka              |
|                       | High School                    | Argyle             |
|                       | High School                    | Austin             |
|                       | High School                    | Bagley             |
|                       | High School                    | Barnesville        |
|                       | High School                    | Biwabik            |
|                       | High School                    | Blooming Prairie   |
|                       | High School                    | Blue Earth         |
|                       | High School                    | Chisholm           |
|                       | High School                    | Coleraine          |
|                       | High School                    | Cottonwood         |
|                       | Industrial High School         | Duluth             |
|                       | High School                    | East Grand Forks   |
|                       | High School                    | Elk River          |
|                       | High School                    | Ely                |
|                       | High School                    | Eveleth            |
|                       | High School                    | Fergus Falls       |
|                       | High School                    | Grand Rapids       |
|                       | High School                    | Hector             |

| STATE OR<br>TERRITORY | NAME OF INSTITUTION         | LOCATION          |
|-----------------------|-----------------------------|-------------------|
| Minnesota . . . .     | High School                 | Hibbing           |
|                       | High School                 | Howard Lake       |
|                       | High School                 | Lake City         |
|                       | High School                 | Le Sueur          |
|                       | High School                 | Litchfield        |
|                       | High School                 | Luverne           |
|                       | High School                 | Mankato           |
|                       | High School                 | New Richland      |
|                       | High School                 | Ortonville        |
|                       | High School                 | Owatonna          |
|                       | High School                 | Pipestone         |
|                       | High School                 | Red Wing          |
|                       | High School                 | Redwood Falls     |
|                       | High School                 | Renville          |
|                       | High School                 | St. James         |
|                       | Central High School         | St. Paul          |
|                       | Mechanic Arts High School   | St. Paul          |
|                       | Cleveland High School       | St. Paul          |
|                       | Humboldt High School        | St. Paul.         |
|                       | High School                 | Sauk Rapids       |
|                       | High School                 | Sleepy Eye        |
|                       | High School                 | Spring Valley     |
|                       | High School                 | Stephen           |
|                       | High School                 | Thief River Falls |
|                       | High School                 | Two Harbors       |
|                       | High School                 | Virginia          |
|                       | High School                 | Wabasha           |
|                       | High School                 | Warren            |
|                       | High School                 | Waseca            |
|                       | High School                 | Wheaton           |
|                       | Winona Seminary             | Winona            |
|                       | Winona High School          | Winona            |
|                       | High School                 | Bonne Terre       |
|                       | High School                 | Cape Girardeau    |
|                       | High School                 | Chillicothe       |
|                       | High School                 | Clayton           |
|                       | High School                 | Flat River        |
|                       | High School                 | Greenfield        |
| Missouri . . . . .    | High School                 | Joplin            |
|                       | Manual Training High School | Kansas City       |
|                       | Westport High School        | Kansas City       |
|                       | High School                 | Kirkwood          |
|                       | High School                 | Lamar             |
|                       | High School                 | Maplewood         |
|                       | High School                 | Maryville         |

| STATE OR<br>TERRITORY        | NAME OF INSTITUTION         | LOCATION       |
|------------------------------|-----------------------------|----------------|
| Missouri . . . . .           | High School                 | Mexico         |
|                              | High School                 | Springfield    |
|                              | Central High School         | St. Joseph     |
|                              | Benton High School          | St. Joseph     |
|                              | Bartlett High School        | St. Joseph     |
|                              | Central High School         | St. Louis      |
|                              | McKinley High School        | St. Louis      |
|                              | Yeatman High School         | St. Louis      |
|                              | Soldan High School          | St. Louis      |
|                              | Sumner High School          | St. Louis      |
| Montana . . . . .            | High School                 | Webster Groves |
|                              | Sweet Grass Co. High School | Big Timber     |
|                              | High School                 | Billings       |
|                              | High School                 | Butte          |
|                              | High School                 | Dillon         |
|                              | Flathead County High School | Kalispell      |
|                              | High School                 | Aurora         |
|                              | High School                 | Beatrice       |
|                              | High School                 | Beaver City    |
|                              | High School                 | Central City   |
| Nebraska . . . . .           | High School                 | Chadron        |
|                              | High School                 | Columbus       |
|                              | Crete High School           | Crete          |
|                              | High School                 | Exeter         |
|                              | High School                 | Fairfield      |
|                              | High School                 | Geneva         |
|                              | High School                 | Hastings       |
|                              | High School                 | Hebron         |
|                              | High School                 | Holdrege       |
|                              | High School                 | Humboldt       |
|                              | Kimball County High School  | Kimball        |
|                              | High School                 | Lexington      |
|                              | High School                 | Lincoln        |
|                              | High School                 | Nelson         |
|                              | High School                 | Newman Grove   |
|                              | Omaha High School           | Omaha          |
|                              | High School                 | South Omaha    |
|                              | High School                 | St. Edward     |
| New Hamp-<br>shire . . . . . | High School                 | Wayne          |
|                              | High School                 | York           |
|                              | High School                 | Berlin         |
|                              | St. Mary's School           | Concord        |
|                              | Pinkerton Academy           | Derry          |
|                              | Robinson Seminary           | Exeter         |
|                              | Gilmanton Academy           | Gilmanton      |
|                              | High School                 | Walpole        |



| STATE OR<br>TERRITORY    | NAME OF INSTITUTION                     | LOCATION         |
|--------------------------|-----------------------------------------|------------------|
| New Jersey ..            | High School                             | Montclair        |
|                          | High School                             | Orange           |
|                          | Pennington Seminary                     | Pennington       |
|                          | High School                             | Perth Amboy      |
| New Mexico ..            | High School                             | Plainfield       |
|                          | High School                             | Clayton          |
|                          | High School                             | Deming           |
|                          | Albany Vocational School                | Albany           |
| New York ....            | High School                             | Batavia          |
|                          | Barlow School of Industrial Arts        | Binghamton       |
|                          | High School                             | Brockport        |
|                          | Manual Training High School             | Brooklyn         |
|                          | Brooklyn Institute of Arts and Sciences | Brooklyn         |
|                          | Buffalo Seminary                        | Buffalo          |
|                          | Drew Seminary for Young Women           | Carmel           |
|                          | High School                             | Dunkirk          |
|                          | High School                             | Glens Falls      |
|                          | High School                             | Hudson           |
|                          | High School                             | Ithaca           |
|                          | High School                             | New Paltz        |
|                          | Hebrew Technical School                 | New York         |
|                          | High School                             | Olean            |
|                          | High School                             | Poughkeepsie     |
|                          | Mechanics Institute                     | Rochester        |
| North Caro-<br>lina..... | High School                             | Saratoga Springs |
|                          | Emma Willard School                     | Troy             |
|                          | High School                             | Goldsboro        |
|                          | High School                             | Greensboro       |
|                          | High School                             | Holly Springs    |
|                          | High School                             | Newbern          |
|                          | High School                             | Raleigh          |
|                          | High School                             | Washington       |
|                          | High School                             | Cando            |
|                          | High School                             | Carrington       |
| North Dakota             | High School                             | Cooperstown      |
|                          | High School                             | Fargo            |
|                          | High School                             | Grand Forks      |
|                          | High School                             | Harvey           |
|                          | High School                             | Kenmare          |
|                          | High School                             | Larimore         |
| Ohio.....                | High School                             | Valley City      |
|                          | High School                             | Williston        |
|                          | High School                             | Akron            |
|                          | Ohio Mechanics Institute                | Cincinnati       |
|                          | Walnut Hills High School                | Cincinnati       |

| STATE OR<br>TERRITORY | NAME OF INSTITUTION                 | LOCATION        |
|-----------------------|-------------------------------------|-----------------|
| Ohio.....             | Woodward High School                | Cincinnati      |
|                       | Hughes High School                  | Cincinnati      |
|                       | Technical High School               | Cleveland       |
|                       | High School                         | Columbus        |
|                       | Steele High School                  | Dayton          |
|                       | Stivers Manual Training High School | Dayton          |
|                       | High School                         | Fostoria        |
|                       | High School                         | Hamilton        |
|                       | High School                         | Lockland        |
|                       | High School                         | Madisonville    |
|                       | High School                         | Springfield     |
|                       | Central High School                 | Toledo          |
|                       | High School                         | West Alexandria |
|                       | High School                         | Bristow         |
| Oklahoma....          | State University Preparatory School | Claremore       |
|                       | High School                         | Granite         |
|                       | High School                         | Hartshorne      |
|                       | High School                         | Lawton          |
|                       | High School                         | Manguin         |
|                       | High School                         | Muskogee        |
|                       | High School                         | Nowata          |
|                       | High School                         | Ramona          |
|                       | High School                         | Stillwater      |
|                       | High School                         | Tahlequah       |
|                       | University Preparatory School       | Tonkawa         |
|                       | High School                         | Westville       |
|                       | High School                         | Corvallis       |
|                       | High School                         | Marshfield      |
| Oregon.....           | Medford High School                 | Medford         |
|                       | Lincoln High School                 | Portland        |
|                       | Washington High School              | Portland        |
|                       | High School                         | Allegheny       |
|                       | Bethlehem Seminary                  | Bethlehem       |
|                       | High School                         | Erie            |
|                       | High School                         | Lebanon         |
|                       | High School                         | McKeesport      |
| Pennsylvania.         | High School                         | Oil City        |
|                       | William Penn High School            | Philadelphia    |
|                       | High School                         | Phoenixville    |
|                       | Margaret Morrison Carnegie School   | Pittsburg       |
|                       | Allegheny High School               | Pittsburg       |
|                       | Girls' High School                  | Reading         |
|                       | Technical High School               | Scranton        |
| Rhode Island.         | East Greenwich Academy              | East Greenwich  |
|                       | Technical High School               | Providence      |

| STATE OR TERRITORY  | NAME OF INSTITUTION                     | LOCATION      |
|---------------------|-----------------------------------------|---------------|
| Rhode Island .      | Moses Brown School                      | Providence    |
|                     | Lincoln School                          | Providence    |
|                     | Miss Wheeler's School                   | Providence    |
|                     | St. Xavier's Academy                    | Providence    |
|                     | Tyler School                            | Providence    |
|                     | High School                             | Providence    |
| South Carolina..... | Rachel Harris Manual Training School    | Woonsocket    |
|                     | High School                             | Marion        |
|                     | High School                             | Spartanburg   |
| South Dakota .      | High School                             | Lead          |
|                     | High School                             | Clarksville   |
| Tennessee ....      | Knox County Central High School         | Fountain City |
|                     | Farragut High School                    | Concord       |
|                     | High School                             | Memphis       |
|                     | Ward Seminary                           | Nashville     |
|                     | Grove High School                       | Paris         |
|                     | High School                             | Tyner         |
|                     | High School                             | Austin        |
|                     | High School                             | Belton        |
|                     | High School                             | Brownwood     |
|                     | High School                             | Corsicana     |
| Texas.....          | High School                             | Dallas        |
|                     | High School                             | Fort Worth    |
|                     | High School                             | Galveston     |
|                     | Grubbs Self-Help and Industrial College | Greenville    |
|                     | High School                             | Hamilton      |
|                     | High School                             | Houston       |
|                     | High School                             | Pilot Point   |
|                     | High School                             | Texarkana     |
|                     | High School                             | Uvalde        |
|                     | High School                             | Van Alstyne   |
|                     | Murdock Academy                         | Beaver        |
|                     | High School                             | Brigham City  |
|                     | Boxelder High School                    | Brigham City  |
|                     | Emery Academy                           | Castle Dale   |
|                     | Snow Academy                            | Ephraim       |
|                     | High School                             | Lehi          |
| Utah.....           | New Jersey Academy                      | Logan         |
|                     | High School                             | Manti         |
|                     | High School                             | Moab          |
|                     | High School                             | Mt. Pleasant  |
|                     | High School                             | Nephi         |
|                     | Sacred Heart Academy                    | Ogden         |
|                     | High School                             | Ogden         |
|                     | Weber Academy                           | Ogden         |

| STATE OR TERRITORY | NAME OF INSTITUTION        | LOCATION       |
|--------------------|----------------------------|----------------|
| Utah.....          | High School                | Park City      |
|                    | High School                | Payson         |
|                    | High School                | Richfield      |
|                    | Salt Lake City High School | Salt Lake City |
|                    | Granite High School        | Salt Lake City |
|                    | Granite Stake Academy      | Salt Lake City |
|                    | Rowland Hall               | Salt Lake City |
|                    | Jordan High School         | Sandy          |
|                    | High School                | Springville    |
| Vermont.....       | High School                | St. George     |
|                    | High School                | Bellows Falls  |
|                    | High School                | Brattleboro    |
|                    | High School                | Rutland        |
|                    | Vermont Academy            | Saxton's River |
| Virginia.....      | High School                | Newport News   |
|                    | High School                | Richmond       |
|                    | High School                | Staunton       |
|                    | High School                | Wakefield      |
|                    | High School                | Waverly        |
|                    | High School                | Aberdeen       |
|                    | High School                | Bellingham     |
|                    | High School                | Castlerock     |
|                    | High School                | Centralia      |
|                    | High School                | Chehalis       |
|                    | High School                | Colfax         |
|                    | High School                | Ellensburg     |
|                    | High School                | Everett        |
|                    | High School                | Garfield       |
| Washington...      | High School                | Hoquiam        |
|                    | High School                | Kalama         |
|                    | High School                | North Yakima   |
|                    | Olympia High School        | Olympia        |
|                    | High School                | Pomeroy        |
|                    | High School                | Prosser        |
|                    | High School                | Puyallup       |
|                    | High School                | Seattle        |
|                    | High School                | Sedro-Woolley  |
|                    | High School                | Snohomish      |
|                    | South Central High School  | Spokane        |
|                    | High School                | Tacoma         |
|                    | High School                | Walla Walla    |
|                    | High School                | Wenatchee      |
|                    | High School                | Cameron        |
| West Virginia.     | Charleston High School     | Charleston     |
|                    | Fairmont High School       | Fairmont       |



| STATE OR TERRITORY | NAME OF INSTITUTION            | LOCATION      |
|--------------------|--------------------------------|---------------|
| West Virginia.     | Huntington High School         | Huntington    |
|                    | Wheeling High School           | Wheeling      |
|                    | High School                    | Williamson    |
|                    | Antigo High School             | Antigo        |
|                    | High School                    | Appleton      |
|                    | High School                    | Bayfield      |
|                    | High School                    | Beaver Dam    |
|                    | High School                    | Beloit        |
|                    | Bethel Academy                 | Bethel        |
|                    | High School                    | Eau Claire    |
| Wisconsin . . . .  | High School                    | Grand Rapids  |
|                    | High School                    | Hayward       |
|                    | High School                    | Janesville    |
|                    | High School                    | Marinette     |
|                    | High School                    | Mayville      |
|                    | High School                    | Menasha       |
|                    | High School                    | Menomonie     |
|                    | Webster Manual Training School | Omro          |
|                    | High School                    | Oshkosh       |
|                    | High School                    | Stevens Point |
|                    | High School                    | Superior      |
|                    | High School                    | Viroqua       |

## 3. SPECIAL INSTITUTIONS.

*A. Schools of Domestic Science and Arts.*

| STATE OR TERRITORY           | NAME OF INSTITUTION                                        | LOCATION                  |
|------------------------------|------------------------------------------------------------|---------------------------|
| Connecticut . . . .          | Housekeeping Experiment Station                            | Darien                    |
| Dist. of Col. . . . .        | Nat. School Domestic Arts and Sciences                     | Washington                |
| Illinois . . . . .           | American School of Household Economics                     | Chicago                   |
|                              | Associated Schools of Domestic Science                     | Chicago                   |
|                              | Evanston School of Domestic Science                        | Haven School,<br>Evanston |
| Massachu-<br>setts . . . . . | Miss Farmers' School of Cookery                            | Boston                    |
|                              | Y. W. C. A. School of Domestic Science                     | Boston                    |
|                              | Garland School                                             | Boston                    |
| Michigan . . . . .           | Worcester Domestic Science School                          | Worcester                 |
|                              | Battle Creek Sanitarium School                             | Battle Creek              |
|                              | Fitch Creche and Training School for Nur-<br>sery Maids    | Buffalo                   |
| New York . . . .             | Mme. Gesine Lemcke's Greater New York<br>School of Cookery | New York                  |

*B. Industrial Schools.*

| STATE OR TERRITORY | NAME OF INSTITUTION                     | LOCATION     |
|--------------------|-----------------------------------------|--------------|
| Alabama.....       | Alabama Girl's Industrial School        | Montevallo   |
| Colorado.....      | State Industrial School for Girls       | Morrison     |
| Connecticut..      | Watkinson Farm School                   | Hartford     |
|                    | Manual Training and Industrial School   | New London   |
|                    | Waterbury Industrial School             | Waterbury    |
|                    | Institute of Craft and Industry         | Waterbury    |
| Georgia.....       | Secondary Industrial School             | Columbus     |
|                    | Fort Valley Industrial School           | Fort Valley  |
|                    | Rabun Gap Industrial School             | Rabun Gap    |
|                    | Berry Industrial School                 | Rome         |
| Idaho.....         | Idaho Industrial Institute              | Weiser       |
| Illinois.....      | Jewish Training School of Chicago       | Chicago      |
| Kansas.....        | State Industrial School for Girls       | Beloit       |
|                    | Topeka Ind. and Educational Institute   | Topeka       |
| Louisiana....      | Southwestern La. Industrial Institute   | Lafayette    |
|                    | Louisiana Industrial Institute          | Ruston       |
| Massachusetts..    | North Bennet Street Industrial School   | Boston       |
| Mississippi.....   | Southern Christian Institute            | Edwards      |
| New York....       | Margaret Sage Industrial School         | Lawrence     |
|                    | Manhattan Trade School for Girls.       | New York     |
| North Carolina..   | Brevard Industrial School               | Brevard      |
| Pennsylvania..     | Berean M. T. and Industrial School      | Philadelphia |
| Rhode Island....   | Townsend Industrial School              | Newport      |
| West Virginia...   | West Virginia Industrial Home for Girls | Industrial   |

*C. Institutions for Defectives and Dependents.*

| STATE OR TERRITORY | NAME OF INSTITUTION              | LOCATION    |
|--------------------|----------------------------------|-------------|
| Connecticut..      | Mystic School for the Deaf       | Groton      |
|                    | American School for the Deaf     | Hartford    |
|                    | Oxford Street School             | Hartford    |
|                    | Connecticut School for the Blind | Hartford    |
|                    | St. Joseph's Cathedral School    | Hartford    |
|                    | St. Peter's School               | Hartford    |
|                    | Sanford School                   | Redding     |
|                    | St. Elizabeth's School           | Ridgefield  |
|                    | Taconic School                   | Salisbury   |
|                    | St. John's Industrial School     | Saybrook    |
| Dist. of Col. .... | Choate School                    | Wallingford |
|                    | Industrial Home School           | Washington  |

| STATE OR TERRITORY | NAME OF INSTITUTION                                     | LOCATION                     |
|--------------------|---------------------------------------------------------|------------------------------|
| Illinois.....      | School of Soldiers' Orphans' Home                       | Normal                       |
| Kansas.....        | School for the Deaf                                     | Olathe                       |
| Kentucky.....      | W. C. T. U. Settlement School                           | Hindman                      |
| Massachusetts..    | The North End Union Branch of the Benevolent Fraternity | Boston, No. 20 Parmenter St. |
| Minnesota....      | Minnesota School for the Deaf                           | Faribault                    |
|                    | Minnesota School for the Blind                          | Faribault                    |
|                    | Minnesota School for the Feebleminded                   | Faribault                    |
|                    | West Side Institute                                     | New York                     |
| New York ....      | Five Points House of Industry.....                      | New York                     |
|                    | Episc. Protectory Home for Children                     | Verbank                      |
| North Dakota..     | School for the Deaf and Dumb                            | Devils Lake                  |
| Ohio.....          | Jewish Orphan Asylum                                    | Cleveland                    |
|                    | Ohio Soldiers' and Sailors' Orphans' Home               | Xenia                        |
| Vermont .....      | State Industrial School (Reformatory)                   | Vergennes                    |

*D. Part-Time Schools.*

| STATE OR TERRITORY | NAME OF INSTITUTION                     | LOCATION         |
|--------------------|-----------------------------------------|------------------|
| Massachusetts..... | Franklin Union                          | Boston           |
|                    | Independent Industrial Evening School   | Brockton         |
|                    | Independent Industrial Evening School   | Cambridge        |
|                    | Independent Industrial Evening School   | Lawrence         |
|                    | Independent Industrial Evening School   | Natick           |
|                    | Independent Industrial Evening School   | Newton           |
|                    | Independent Industrial Evening School   | New Bedford      |
|                    | People's Institute of Northampton       | Northampton      |
| Missouri.....      | South End Industrial School             | Roxbury          |
|                    | Independent Industrial Evening School   | Walpole          |
| Missouri.....      | Y. W. C. A. Educational Department      | St. Louis        |
| New Hampshire      | Mrs. Hill's Summer Classes in Cookery   | South Chatham    |
|                    | Evening Technical School                | Jersey City      |
| New Jersey ...     | Bergen Street Evening High School       | Newark           |
|                    | Franklin Evening High School            | Newark           |
|                    | Hamburg Place Evening High School       | Newark           |
|                    | Central Evening High School             | Newark           |
|                    | Thirteenth Avenue Evening High School   | Newark           |
| New York ....      | Central Evening High School for Women   | Brooklyn         |
|                    | School of Domestic Science              | Chautauqua       |
|                    | L. I. City Ev'g High and Trades Schools | Long Island City |
|                    | Sargent Industrial School               | Matteawan        |
| Ohio.....          | Evening Industrial School for Adults    | New York         |
|                    | Dept. of Education, Harlem Y. W. C. A.  | New York         |
|                    | Educational Department, Y. W. C. A.     | Cleveland        |
| Pennsylvania ...   | Central Y. W. C. A. Dept. of Education  | Pittsburg,       |

*This list will be completed in the October number by the addition of Negro and Indian schools.*

## SUGGESTED OUTLINES FOR CLUB STUDY.

COLLECTED BY MRS. OLAF N. GULDLIN.

*Chairman Household Economics Department, General Federation of Women's Clubs.*

### I. CARE AND FEEDING OF CHILDREN.

#### (1). Inheritance:

Relation of selection of parents to perfection of progeny.

Conditions governing and limiting inheritance.

#### (2). Environment:

|            |                                      |             |
|------------|--------------------------------------|-------------|
| Prenatal   | { Care of mother.                    |             |
|            | { Effect of diseased parents.        |             |
| Post natal | { Exercise.                          | { Clothing. |
|            | { Cleanliness.                       |             |
|            | { Fresh air.                         |             |
|            | { Preventable diseases.              | { Habits.   |
| Food.      | { Regularity of feeding.             |             |
|            | { Natural versus artificial feeding. | { Teeth.    |
| Milk.      | { Its use and modification.          |             |
|            | { Its source and care.               |             |
|            | { Pasteurization and sterilization.  |             |

Patent foods.

Food for older children.

Use of drugs.

Relation of parent and child.

### REFERENCES.

- Abbott E. H.: On the Training of Parents. Houghton, Mifflin & Co., Boston.  
Cotton, A. C.: Care of Children. Amer. School of Home Economics, Chicago, Ill.  
Holt, E. L.: The Care and Feeding of Children. D. Appleton & Co., N. Y.  
Hunt, Caroline L.: Daily Meals of School Children. U. S. Bureau of Education Bulletin, 1909, No. 3. Superintendent of Documents, Washington, D. C.  
Kirkpatrick, E. A.: Fundamentals of Child Study. Macmillan Co., N. Y.  
Oppenheim, Nathan: Development of the Child. Macmillan Co., N. Y.  
Starr, Louis: Diseases of Digestive Organs of Children. Blakiston's Sons & Co., Philadelphia, Pa.



Washburne, M. E.: *Study of Child Life*. Amer. School of Home Economics, Chicago, Ill.

Pollak, Gustav: *The Century Book for Mothers*. The Century Co., N. Y.

Brown, D. R.: *The Baby*. Whitcomb & Barrows, Boston, Mass.

## II. FOOD.

(1). The elements which compose the body and the relation these bear to the composition of the food.

(2). Composition, use, function in the body and some of the characteristics of the food stuffs:

(a) Protein; (b) carbohydrates; (c) fats; (d) mineral matter; and (e) water.

(3). The relative merits of the various protein foods.

(4). The relation of sugar, starch, fat, and protein in the dietary.

(5). What constitutes a well planned dietary.

(6). How to plan a dietary for a family of varying ages, activities, and conditions of health.

(7). Relation of right nutrition to general welfare.

(8). Diet in disease.

(9). Advanced study of digestion and metabolism.

(10). Care and preparation of food:

a. Characteristics of the food stuffs as related to their cookery.

b. Cookery of meat, eggs, cereals, bread, sauces, puddings, etc.

c. Relation of cookery to general welfare.

## III. PURE FOOD.

(1). National and state laws.

(2). How present enactments are being carried out.

(3). The part clubs can take in bringing about better laws and in establishing sanitary markets.

(4). Food adulterations.

(5). Simple processes for detecting adulteration.

(6). The dangerous use of preserving powders in home canning.

## IV. THE HOUSE.

(1). Architecture.

(1). Design.

(2). Materials.

(3). Floors.

(4). Woodwork.

(5). Mantels

(6). Windows.

(7). Porches

## (2). Requirements.

- (1). Location.
- (2). Sanitation.
- (3). Ventilation.
- (4). Heating and lighting.
- (5). Tendency to omit all unnecessary ornamentation.
- (6). Rooms must have plenty of windows, closets, conveniences, outdoor sleeping porches, a summer living room.
- (7). Place of the hall in the modern houses.
- (8). The whole arrangement should simplify labor, satisfy a refined sense of beauty, be proportionate to the financial ability of the family in property and income, and really put living on a higher plane.

## V. THE BUILDING OF THE HOUSE.

*Arranged by Mrs. John Hessler, Decatur, Ill.*

- (1). Choosing a site.
  - (2). Planning the house, construction of the shell.
  - (3). Plumbing, heating, ventilation, lighting.
  - (4). Doors and doorways, windows.
- Design of doors and windows, spacing and size of windows.

- (5). Halls and stairways, fireplaces.

Their arrangement must keep in view the practical needs of family life and convenience.

- (6). Porches and outdoor living rooms. Sleeping porches.

- (7). Laying out the grounds.

A successful house will simplify the labor of the housewife, be proportionate to the means of the family, satisfy a sense of beauty, and put living on a higher plane.

## BIBLIOGRAPHY.

Chas. E. Hooper: *The Country House*. (This book may be used as a guide in solving practical problems of construction. Some other books are stronger on the artistic side.)

Clark: *The Care of the House*.

Sturgis Root, etc.: *Homes in City and Country*.

Desmond and Froline: *Building a House*.

## VI. HOUSEHOLD DECORATION.

(Arranged by Mrs. John Hessler, Decatur, Ill.)

- (1). Woodwork.
- (2). Walls and ceiling.
- (3). Floor coverings.
- (4). Carpets, oriental rugs, inexpensive modern rugs.
- (5). Draperies and upholstery fabrics.
- (6). Furniture. (a) Historic furniture. (b) How to choose desirable furniture. (c) Colonial furniture. (d) Mission furniture, etc.
- (7). Pictures, pottery, bric-a-brac—Their use and abuse.
- (8). Schemes of color and arrangement.

The study of the Theories of Ruskin and of the life and work of William Morris is a good introduction to the study of house decoration. The debt of modern decorative art to the arts and crafts movement may be traced through this course of studies.

## BIBLIOGRAPHY.

- Mabel Tuke Priestman: *Art and Economy in Home Decoration*.  
Wharton and Codman: *The Decoration of Houses*.  
Davis Benis: *Style in Furniture*.

## VII. SANITATION.

- (1). Soil, cellar, plumbing, drainage.
- (2). Water supply.
- (3). Disposal of refuse.
- (4). Lighting, heating, ventilation.
- (5). Location and arrangement to secure sunlight and air.
- (6). Refrigerators, sinks, bath rooms.
- (7). Sterilization.
- (8). Insect pests.
- (9). Food adulterations.

## REFERENCES.

- Odgen, H. N.: *Rural Hygiene*, Macmillan Co., N. Y.  
Sedgewick, W. T.: *Principles of Sanitary Science and the Public Health*. Macmillan Co., N. Y.  
Gulick, Luther H.: *The Efficient Life*. Doubleday, Page & Co., N. Y.

## VIII. LABOR SAVING MACHINERY.

- (1). Vacuum cleaners.
- (2). Dustless mop and cloth.
- (3). Fireless cookers.
- (4). Gas appliances.
- (5). Electric appliances.
- (6). Alcohol appliances.
- (7). Mop wringer.
- (8). Kitchen cabinet.
- (9). Kitchen water proof and washable aprons.
- (10). Washing machine, hand and power.
- (11). Mangles.
- (12). Patent mops, cloths and brushes.
- (13). Bread and cake mixers.
- (14). Coffee and tea percolators.
- (15). Wheel trays.
- (16). Dish drainers and washers.
- (17). Thermos bottles.

Labor saving is largely proportionate to the intelligent understanding and practical application of systems and methods. It is the laborer and family coöperation quite as much as the machine.

## IX. THE LAUNDRY.

- (1). Best processes.
  - (a). Washing.
 

|                     |                   |
|---------------------|-------------------|
| Hand vs. machinery. | Softening agents. |
| Soaps.              | Starches.         |
|                     | Bluing.           |
  - (b). Drying.
    - Out of doors.
    - Artificial.
  - (c). Ironing.
    - Methods of heating irons as related to economy of time and money.
    - Hand ironing vs. machine ironing.
- (2). Removing stains.
- (3). The economic consideration of modern equipment.
  - (a). Stationary tubs.
  - (b). Washing machine.
  - (c). Mangles.
  - (d). Electric and gas irons, gasoline and electric irons.
  - (e). Drying equipment.



- (4). The need of municipal laundries.
- (5). European laundries.
- (6). What has been done in America to solve the problem?

#### BIBLIOGRAPHY.

Balderston, L. Ray and Limerick, M. C. Laundry Manual. Avil Printing Co., Philadelphia, Pa., 1900.

#### X. TEXTILES.

- (1). Clothing.
- (2). Study of materials, properties, manufacture.
- (3). Hygiene of wearing apparel.
- (4). Relative values of hand and machine work.
- (5). Suitability for use and income.
- (6). Economics of purchase.
- (7). Social responsibility of wearer.
- (8). Economy of time in relation to making and buying.
- (9). Sweatshop problems.

#### XI. HOUSEHOLD MANAGEMENT.

##### *Division of Income—Expenditures:*

- (1). Food.
- (2). Rent.
- (3). Clothing.
- (4). Operating expenses:  
Fuel, light, water, wages, laundry, repairs, and supplies.
- (5). Investment.
- (6). Interest, insurance, taxes.
- (7). Dentist, doctor, drugs.
- (8). Incidentals.
- (9). Personal expenses.
- (10). Higher life:  
Church, charity, education, recreation, travelling.

#### REFERENCES.

Terrill, Bertha M.: Household Management. American School of Home Economics, Chicago, Ill.

THE JOURNAL OF HOME ECONOMICS.

## XII. HOUSEHOLD MANAGEMENT.

*By Mrs. Paul Doty.*

- (1). The household budget for an income of
  - (a) \$1200 per year.
  - (b) \$5000 per year.
- (2). A system of household accounting.  
Classification, inventory, equipment.
- (3). Operating expenses.  
Materials.  
Food—wholesale or retail.  
Clothing—made or ready-made.
- (4). Maintenance.  
Repairs and care of the home.  
Extensions.
- (5). Labor.  
Service rendered by family members.  
Paid service and material.
- (6). Rent or taxes and various kinds of insurance, life, fire, burglary, beneficiary societies.  
Shelter, heat, light.
- (7). Higher life.  
Expensive education, vacation (what sort), recreation, amusement, entertainment, betterment.
- (8). Home industries and their relation to expenditures.  
The arts and crafts movement.
- (9). Household emergencies.  
Illness, first aid, asphyxia, burns, etc.  
Accidents.  
Fireproof construction, fire escapes, etc.
- (10). Marketing.  
The selection and care of meat, comparative values, use of charts, purchase of other foods.
- (11). Domestic service.  
Routine of work for a typical family; what constitutes a day's work; some problems in connection with domestic service, doing our duty; privileges and penalties; hiring and discharge.
- (12). Study of child life.

## BIBLIOGRAPHY.

- Mathieu, William: *Chemistry of Cooking*. \$1.50.  
 Salmon, Lucy: *Domestic Service*. \$2.00.  
 Church, A. H.: *Food*. \$1.20.  
 Farmer, Fannie M.: *Food and Cooking for the Sick and Convalescent*. \$1.50.  
 Richards, Ellen H.: *Food Materials and their Adulterations*. \$1.00.  
 Hill, Sarah C.: *A Cook Book for the Nurse*. \$0.75.  
 Richards and Elliott: *Chemistry of Cooking and Cleaning*. \$1.00.  
 Richards, Ellen H.: *The Cost of Food*.  
 Richards, Ellen H.: *The Cost of Living*.  
 Richards, Ellen H.: *The Cost of Shelter*.  
 Thudichum: *The Spirit of Cookery*.  
 Salmon, Lucy: *Progress in the Household*.  
 Haskins: *How to Keep Household Accounts*.  
 Pestalozzi: *How Gertrude Teaches her Children*.  
 Oppenheim, Nathan: *The Development of the Child*.  
 Preyer, W. (Translated from the German by H. W. Brawn): *Mental Development of the Child*.  
 Trumbull, H. Clay: *Hints on Child Training*.  
 Compayne, Gabriel (Translated from the French by Mary E. Wilson): *The Intellectual and Moral Development of the Child*.  
 Hogan, Louise E.: *A Study of a Child*, Harper & Bros.

## XII'. SUGGESTIONS IN SOLVING THE SERVANT PROBLEM.

- (1). Remove all discord that might grow out of our own inefficiency.
- (2). Eliminate drudgery.
  - (a). Regulate home life to secure justice, freedom, system, coöperation from and to the whole family, including the maid.
  - (b). Introduce as much modern machinery and labor-saving devices as will truly save labor.
  - (c). Apply household chemistry and study all scientific short cuts.
  - (d). Make the house a home, not a museum.
  - (e). Supply menus that conform to better health standards, made also with reference to work, cost, fire, and time.
  - (f). Plan a living room for the one who is to serve.
- (3). Establish industrial schools, introduce domestic science into the public schools, open extension classes in these public school departments, and everywhere create respect for intelligent labor.

(4). Train both housewife and servants how to make entertainments, dress, and the household conform to better standards and meet present day requirements.

#### REFERENCES.

JOURNAL OF HOME ECONOMICS, Vol. III, No. 2. Household Service as a Labor Problem.

Salmon, Lucy M.: Domestic Service. Macmillan Co., N. Y.

#### XIV. COÖPERATION.

(1). How can every city have successful housekeepers' conferences?

(2). The extension Home Economics worker from the State Agricultural College.

(3). The farmer's institute worker.

(4). State officers—State chemist, etc.

(5). City officers—Superintendent public schools, chairman board of health, board of safety, meat inspectors, milk inspectors, medical inspectors in public schools.

(6). City specialists—Architects, plumbers, physicians, baby specialists, eye and ear specialists, children's specialists, interior decorators, florists.

(7). Old housekeepers who have worked out the simplest methods of doing work, who understand sanitation and personal hygiene, who are expert cooks and managers.

(8). Another method—

(a). Secure a domestic science department from the school board.

(b). Employ domestic science teachers.

(c). Open classes to the public.

#### IV. PROFESSIONS GROWING OUT OF TRAINING IN HOME ECONOMICS.

(1). Home making.

(2). Supervisors and teachers in college, schools, settlements and playgrounds.

(3). Institution managers.

(4). Trained dietitians.

(5). Managers of laundries.

(6). Managers of lunch rooms and bakeries.



- (7). Extension workers and professional homemakers at farmers' institutes.
- (8). Sanitary inspectors.
- (9). Designers—dressmaking and millinery.
- (10). House decorators, furnishers.
- (11). Expert buyers.
- (12). Expert care of children.
- (13). Where is this training procurable?
- (14). The part Home Economics is taking in the adjustment of our overfed and underfed nation.

#### XVI. HELPS IN STUDYING HOME ECONOMICS.

- (1). The American Home Economics Association and the JOURNAL OF HOME ECONOMICS.
- (2). Write to Whitcomb & Barrows for book list.
- (3). Write to American School of Home Economics, Chicago, Ill., for pamphlets upon home and club study.
- (4). Get publications relating to food and other phases of Home Economics from U. S. Department of Agriculture, Washington, D.C.
- (5). Coöperate closely with the chairman of Home Economics, General Federation of Women's Clubs, Mrs. Olaf N. Guldlin, Fort Wayne, Ind.

#### XVII. SUGGESTED SUBJECTS.

##### *What clubs are doing in Home Economics.*

- (1). Helping to obtain a fund to build model tenement houses in Los Angeles.
- (2). Holding housekeepers' conferences, short courses, demonstrations, and lectures.
- (3). Settlement work.
- (4). Placing domestic science books in public libraries.
- (5). Securing state traveling libraries on domestic science.
- (6). Coöperating with agricultural colleges in extension work.
- (7). Coöperating with corporations in securing exhibits.
- (8). Taking part in state conferences at universities.

## SIX TALKS ON HOUSE MANAGEMENT AND METHODS.

The following plan will be used in Baltimore, Maryland, during the season of 1911 and 1912 under the auspices of the State Federation of Women's Clubs. The talks will be given monthly from November to April inclusive and will be abundantly illustrated. It is expected that groups of women will be interested in taking up subjects under each head for closer study, their results to be reported at the following meeting.

### (1). The kitchen.

Its proper size, lighting, and ventilation; arrangement of furniture; means of lighting by a high window; use of shelves. The outfit of a 7 x 10 ft. kitchenette of an apartment house and of a 14 x 18 kitchen. What are we to do with a large kitchen? The floor and its care. Kitchen walls.

The country kitchen, its special problems.

Table tops of wood, oil-cloth, zinc.

Bring drawings if possible.

### (2). Utensils, good and bad.

Where shall they be kept; some of the newer utensils. Kitchen spoons, aluminum ware. The fireless cooker; what it will do and what it will not do. Smokeless broilers. The kitchen cabinet. Fireproof serving dishes. The casserole, self-basting roaster, and bread mixer. The shad plank. Dish drainers. Lid holders, mop wringer.

### (3). Fuels compared as to cost of equipment.

Cost of running; the best method of using and efficiency of wood, hard coal of different sizes, soft coal, coke, charcoal, gas, kerosene, alcohol, and electricity; gas from gasoline for country houses; iron tops for gas stoves. Separate heaters for water; the gas heater, the coil in the furnace, the small stove in the cellar connected with a jacketed waterback.

### (4). The laundry.

Shall laundry tubs be put in the kitchen and their use as a table?

What washing machinery is to be recommended?

The best methods of washing. Removing stains.

Cost of home and outside work compared.

How to reduce the amount of ironing.

(a). By the use of the mangle, its cost and operation. A new use for a letter press.

(b). The larger use of woven and seersucker underwear.

The alcohol iron, the iron in an asbestos hood. The laundry sprinkler.

(5). Cleaning methods.

Our relation to the architect; tight windows, tight floors, smooth wood work without dust catchers.

Our relation to dirt outside the house, the smoke nuisance, dirty streets.

Proper treatment of wooden floors and rugs.

The vacuum cleaner—cost and use.

Methods of sweeping and dusting—window washing.

Cleanliness to be regarded from two points of view—hygienic and esthetic.

(6). Methods of doing work to save time and strength.

The height of tables and sinks and ironing boards.

Bad postures. The need of a change of work.

The importance of working in good light and air.

The basement kitchen.

Lessons learned from institutional methods.

How to save steps: The "cold pantry." Use of the tray and of tables on castors.

The "ten-hour day" in house work and its relation to the service question.

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MAY 1, 1911.

### FOODS AND COOKERY.

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Lessons in Elementary Cooking. Mary Chandler Jones, of Brookline, Mass. Schools. *Boston Cooking School Magazine*, January-April. Outlines of School lessons.

Cookery in Literature. E. E. M. *Boston Cooking School Mag.*, February, pp. 345-347; March, pp. 371-373. Interesting quotations.

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Nuts as Food. Frederic J. Haskin. *Am. Food Jour.*, February, pp. 27-28.

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Studies of Poultry from the Farm to the Consumer. M. E. Pennington. U. S. Dept. Agr., Bureau of Chem., Circ. 64.

Determination of Cocoa Shells in Cocoa Powder. W. L. Dubois and C. I. Lott. *Jour. Ind. and Eng. Chem.*, April pp. 251-252.

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The Estimation of Essential Oils. C. D. Howard. *Jour. Ind. and Eng. Chem.*, April, p. 252.

Test for Age of Milk. H. Bertin-Sans and E. Ganjoux. Abs. in *Jour. Am. Med. Assn.* April 1, p. 1009.

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The Preparation and Properties of an Oxidase occurring in Fruits. H. P. Bassett and F. Thompson. *Jour. Am. Chem. Soc.*, March, pp. 416-423.

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The Nutritive Value of Beef Extract. *Pharm. Journ. (London)* 4, ser. 31 (1910) No. 2455, p. 548. Abs. in *Exp. Station Record* 24 (1911) No. 2, February, p. 168.

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Present Knowledge of Thyroid Function. S. P. Beebe. *Jour. Am. Med. Assn.* March 4, pp. 658-661.

The Function of the Thymus. Editorial, *Jour. Am. Med. Assn.*, March 25, pp. 898-899.

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Ten Years Progress in the Field of Protein Metabolism. Otto Folin. *Cleveland Medical Journal*, vol. 8, pp. 645-52; Abs. in *Chem. Abs.*, April 20, p. 1475. (A valuable review.)

Contribution to our Knowledge of Protein Metabolism. F. Frank and A. Schittenhelm, *Chem. Abs.*, April 10, p. 1307-8. (Relative value of different protein foods.)

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Studies on Drinking Water. III. On the Uric Acid Elimination Following Copious Water Drinking Between Meals. S. Z. Rulon, Jr. and P. B. Hawk. *Jour. Am. Chem. Soc.*, 32, pp. 1686-91.

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The Air we Breathe. Kent, Crowell, and Jones. *Science*, March 31, pp. 486-491. (Correspondence explaining our knowledge of the science of heating and ventilation.)

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Women Laundry Workers in New York. Sue Ainslie Clark and Edith Wyatt. *McClure's*, February.

Why Women are Paid less Than Men. Richard Barry. *Pearson's*, March.

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The Perkin Medal Award. *Jour. of Ind. and Eng. Chem.*, March, pp. 143-151. Interesting notes on the early history of aluminum.

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The Servantless Home. Mary H. Talbott. *Good Housekeeping*. April, pp. 469-470. Some practical suggestions.

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Home Economics in Iowa. Caroline L. Hunt. *Good Housekeeping*, April, pp. 460-465. One of a series of articles, 1910-11.

The Cost of Living. Henry Pratt Fairchild. *Popular Science Monthly*. April, pp. 377-380. The cost of food increases as the rush to the cities continues.

Country Hospitals and Nurses—A Long Step Forward. *World's Work*. April, pp. 14196-7. (Editorial.)

Needed—A Domestic Immigration Policy. Frances E. Kellor. *North Am. Rev.* April.

The Vital Decade of our commercial History. James E. Dunning, *North Am. Rev.*, March.

Scientific Cooking by Gas in the Diet Kitchen of A Famous Hospital. Vincent S. Cooke. *Gas Logic*, (N.Y.) April, pp. 3-4 (In Johns Hopkins Hospital).

## THE FORM OF PHOSPHORUS IN MEAT.

LOUISE STANLEY.

*Home Economics Department, University of Missouri.*

For some time it has been considered that all of the water-soluble phosphorus in meat has been present in an inorganic form. In some work done two years ago at the University of Missouri we questioned the method which previous experimenters have used in the separation of organic and inorganic phosphorus, and by our method of separation we showed that practically all of the soluble phosphorus is present in an inorganic form. This compound is split, and in roasts cooked at different temperatures we find a corresponding decrease in the amounts of organic phosphorus, the roast which was cooked at a temperature of 98.5° containing practically no phosphorus in the organic form. These results, if correct, will have some significance in feeding where it is desired to give as much phosphorus as possible in the organic form. A fuller report of this work can be had by referring to the *Journal of Industrial and Engineering Chemistry*, May, 1910.



# NATIONAL EDUCATION ASSOCIATION.

## DEPARTMENT OF MANUAL TRAINING AND ART.

### PROGRAM.

*President*, Clifford B. Connelley, Pittsburgh, Pa. *Secretary*, C. Valentine Kirby, Buffalo, N. Y.

*Meeting place*: San Francisco, Cal., July 8-14, 1911.

### GENERAL.

(1). To What Extent Does Manual Arts Training Aid in Adjustment to Environment: Clifford B. Connelley, Dean of School of Applied Industries, Carnegie Technical Schools, Pittsburgh, Pa.

(2). The Dynamic Value of Manual Arts in the Public School System of Education: Hon. T. D. Sensor, Dept. of Public Instruction, Trenton, N. J.

(3). The Requisites of the Efficient Teacher in Industrial Schools: Dr. G. E. Gerwig, Sec'y of Board of School Controllers, N. S., Pittsburgh, Pa.

Discussions: James Edwin Addicott, Director of Education, Summer Institute of Mechanic Arts, Oakland, Cal.; Prof. Sherer, Throop Polytechnic Institute, Pasadena, Cal.; Mr. Winslow.

### HOUSEHOLD ARTS.

Chairman: Miss Ednah A. Rich, President, State Normal School of Manual Arts and Home Economics, Santa Barbara, Cal.

(1). Report of Committee on Nomenclature: Miss Ednah A. Rich.

(2). The Public School Domestic Science Department as an Influence in the Community Enforcing the Observance of Pure Food Laws, Civic Cleanliness, etc.: Miss Mattie P. Clark, Polytechnical High School, Oakland, Cal.

(3). Some Actual Needs for Intelligent Purchasing of Household Commodities and Practical Methods for Keeping Household Accounts: Miss Etta P. Flagg, Los Angeles, Cal.

Discussions: William R. Snyder, Prin. Hollywood High School, Hollywood, Cal.; Miss Harriet A. Boyer, Head of Domestic Science Department, H. Sophie Newcomb Memorial College, Tulane University, New Orleans, La.

#### ART.

In Charge of Meeting: A. B. Clark, Department of Drawing, Leland Stanford Junior University, Stanford University, Cal.

(1). Art Education in the Public Schools, an Essential Civic of Perfection: Mr. A. B. Clark.

(2). Art's Service as a Basis for Classified Knowledge (Scientific Development): (Speaker not selected.)

(3). What has Art in the Schools done to Preserve and Cultivate the Imagination: Miss May Gearhart, Supervisor of Music, Los Angeles, Cal.

Discussions: Ellsworth Woodward, H. Sophie Newcomb Memorial College, New Orleans, La.; Katherine M. Ball, Supervisor of Drawing, San Francisco, Cal; Miss Hitchell, Supervisor of Drawing, Chicago.

#### MANUAL TRAINING.

Chairman: Clifford B. Connelley, Dean of the School of Applied Industries, Carnegie Technical Schools, Pittsburgh, Pa.

(1). The New Standard of Present Day Industrial Education in Europe: Paul Kreuzpointner, Chairman of Industrial Committee, American Foundrymen's Association, Altoona, Pa.

(2). The Requisites of Effective Teaching in Manual and Household Arts: Miss Helen Louise Johnson, Director, Good Housekeeping Institute, Springfield, Mass.

(3). Present Problems in the Literature of the Manual Arts and Vocational Education: William T. Bawden, Assistant Dean of the College of Engineering, University of Illinois, Urbana, Ill.

Discussions: Mr. Louis Butler, Supervisor of Manual Training, San Jose, Cal.; Arthur G. Chamberlain, Throop Polytechnic Institute, Pasadena, Cal.; George A. Merrill, Prin., California School of Mechanical Arts, San Francisco, Cal.

## EDITORIALS.

We refer our readers to page 213 for a brief obituary notice of Mrs. Richards followed by a tribute from the president of this Association, Professor Isabel Bevier. Those who will gladly learn more of this useful and many-sided life will be interested to know that the October number of this JOURNAL will be used as a memorial to Mrs.

**Death of Mrs. Richards.**

Richards to which many of her co-workers will contribute. Especial emphasis will be laid on her relation to the Home Economics movement, for in this she has always been the central figure. Her relation to it was indeed so unique that one seeks in vain for a parallel. She in her own life saw the transition from the simple and almost primitive conditions in this country when the varied activities of the farm household fitted the girl and boy for life's duties, to the more specialized conditions of town and city which called for training of hand and eye and the learning of household arts in the light of the newer scientific knowledge; which made necessary, also, the restating in modern terms of the relation of woman to the home and the place of the home in our developing national life. This movement came to be the most absorbing of her interests and to its promotion, her scientific training and her immense power of labor paid generous tribute. She lived to see it recognized, honored and adopted into our educational system.

Copies of the photograph of Mrs. Richards that appeared in the February number of the JOURNAL may be ordered through the JOURNAL. Price 25 cents.

Two Summer Meetings of the American Home Economics Association will be held in June and July, 1911. One of these is a section meeting at the National Education Association Convention, San Francisco, July 8-14, at which time a four-day program of the Association will be given on the afternoons of July 10, 11, 12 and 13; the other is a meeting of the Administration Section at the Lake Placid Club, June 27-July 1.

A strong program is being arranged for the San Francisco meeting, including in addition to scientific papers, topics which will be of espe-

cial help to teachers and housekeepers. This will be the first meeting of the American Home Economics Association in the far west and will undoubtedly bring together from that section many persons interested in Home Economics.

The Administrative Section will devote its attention to the problems of management in the private household and the institutional household. It will be of interest especially to persons professionally concerned with household management, but teachers of Home Economics will also be welcome to the conference and will find in it much help. It is announced that "the trustees of the Lake Placid Club extend member's privileges to all who attend the conference. The charge for table board is \$2.50 per day and rooms will be furnished without expense."

The full programs of the two meetings will be mailed to all members of the American Home Economics Association early in June.

Club women and individuals who are interested in the development of household processes along modern lines will find suggestions in the outlines for club study furnished by Mrs. Guldlin, Chairman of Household Economics in the General Federation of Clubs, and also in the more detailed plan that is to be used by club women in Baltimore, Md., during the next season.

In working out all such plans original sources of information should be sought in books on the subjects, in bulletins issued by the various technical schools and universities having departments of Home Economics, and wherever accurate information may be found. Such references when found should be carefully preserved and put at the service of other groups. In future numbers of the JOURNAL will appear lists of reference books so annotated that they will be of real use to the student, and the editor will welcome help from any quarter in the preparation of such lists. The present waste of effort in all these lines should cease.

Our readers may be interested to learn that on May 1, renewals to the JOURNAL for 1911 had been received comprising substantially two-thirds of the subscribers of last year, and the majority of these were also enrolled as members of the Association. The paid subscriptions now number over 1000 and the membership list is about 830.



These figures are encouraging in that they represent considerable increases over the corresponding enrollment at this date on any previous year. There have been surprisingly few absolute withdrawals from our lists, and many who have for a time severed their connection have again joined the number. These facts, together with the large number of new names steadily being added, bear witness that there is room for a publication such as the JOURNAL and that the Association meets an actual need.

Encouraging as is the situation, viewed from this standpoint, much yet remains to be done. There are still too many from whom no definite decision as to continuance or withdrawal for the future has been received, and not until the element of uncertainty thereby created has been removed can plans be made. We therefore urge upon our present subscribers that they assist in making the JOURNAL better by enlisting the support of friends and associates and thereby increasing the resources at our disposal. Special efforts are being made to enlarge and strengthen our organization, and upon the success of these efforts and the coöperation of all who are interested in the promotion of the cause of Home Economics will depend the fate of the plans for a larger usefulness which are now being formulated.

The editors repeat their request for numbers 1 and 2 of Volume I and number 1 of Volume II. Forty cents will be paid for each number in cash or in credit on subscriptions.

**Back Numbers of the Journal.**

Attention is directed to a typographical error in the article entitled Planning Meals, by Miss Emma S. Jacob, which appeared in the April JOURNAL. On page 163, the final lines should read "4 ounces of protein,  $4\frac{1}{2}$  ounces of fat and 16 ounces of carbohydrates will meet the above requirements."

**A Correction.**

## NEWS FROM THE FIELD.

The department of Home Economics has grown beyond expectation. New equipment has made it possible to accommodate large classes in both cooking and sewing, and three different classes are running nearly every period of the working hours. Advanced students in domestic science are required to serve dinners to special guests in parties of eight, and the delicious courses served, as well as the attractive service by the girls is convincing proof of the excellence of training in this line.

**Florida State  
College for  
Women.**

To say that the students pursuing Home Economics enjoy their work is stating the situation mildly, for they not only enjoy it, but they manifest the greatest eagerness and enthusiasm in giving their thoughts as well as their hands to the mastery of these household arts.

Miss Margaret McCarty, director of the department, has been called to different parts of the state in extension work for frequent addresses. Miss Lewis, the teacher of domestic art, was invited to give an address on Ways and Means of Improving Home Life at the Educational Conference held in Jacksonville in April.

At a women's congress which was held March 2 and 3, in connection with the Michigan farmers' institute round-up, the following subjects were discussed: The parents' obligation to the child; the prevention of infant mortality; health and beauty in home and school; household management; business methods for farmers' wives; the home reading table; practical demonstrations in bacteriology; food values; and hints on the selection of textiles. There was also an exhibition and demonstration of the application of electricity to domestic purposes.

**Michigan  
Agricultural  
College.**

Throughout the state of Michigan the women's clubs are interesting themselves more and more in domestic science work. They have a special day for programs relating to it and many are studying domestic science books regularly. They are also helping to establish Home Economics courses in the schools and colleges of the state.

The demand for speakers on domestic science subjects is increasing rapidly although the department as yet gives no short course.

Miss Nelle Nesbitt, assistant in the department of Home Economics, is doing some work on the amount of protein consumed per day by college girls to see exactly upon what standard they are living.

**University of  
Missouri.**

Miss Winona Woodward, a student assistant in the department, is continuing her studies in isolating the organism which causes flavor in salt rising bread. When this is finished she expects to compare salt rising with other bread as to the chemical constituents which cause its flavor.

Miss Charley Tidd, also an assistant in the department, has been doing some work in connection with the department of education on the relation of the school work to the home. This research will be presented as a master's thesis in the school of education in June.

Plans are being projected for the establishment of an experimental station. The department is already cooperating with the agricultural department of the college in a study of fibre materials. Texas offers an unusually fine field for this kind of work because of the great variety of high class fibres, both animal and vegetable, that are and can be produced. Experiments with silk culture have been successful.

**College of Industrial Arts, Denton, Texas.**

Next year the college is planning to join the Texas Agricultural and Mechanical College in a demonstration tour in agriculture, stock raising, and Home Economics. Special plans are being made for textile demonstrations at this time.

An outline in textile and Home Economics study for the women's clubs of the state has been issued. The outline, in connection with one on domestic science, is to be published through the Home Economics committee of the state federation. The department is also actively cooperating with the Eight Week Clubs of the Y. W. C. A. of Texas in arranging courses of study in textiles and Home Economics for both the city circles and the country associations.

The department of Home Economics was represented by one worker on the special trains which were run over the central part of Utah in February doing institute work. In the morning and afternoons demonstrations on bread and meat were given, and in the evening talks on housekeeping in a joint session with the men.

**Agricultural College of Utah.**

The college year has been the most successful thus far known, as there have been 170 girls in the department, a large proportion of whom have stayed through the year.

The courses offered in the Home Economics department at the Summer School of 1911 have been arranged with particular reference to the needs of Home Economics teachers who wish advanced work, of teachers who wish to begin a study of the subject, and of regular students who wish to continue work during the summer.

The woman's building, which is entirely devoted to domestic science and domestic art work, affords opportunity for studying the design and cost of equipment. The library contains most of the new books pertaining to Home Economics.

The courses offered include two laboratory courses in food, one for beginners and one for advanced students; dietetics and nutrition; a teachers' course; household art; dressmaking; and applied art.

The extension work for the college of agriculture this year has included courses for housekeepers and farmers' wives in nine centers in the state. The work has been received very enthusiastically and as a rule the attendance has been very large. Mrs. Nellie Kedzie Jones of Minneapolis has been the speaker at three of the meetings. Otherwise the teachers of Home Economics at the county agricultural schools and lecturers from the university have carried the work.

**University of Wisconsin.**

The subjects of Home Economics and manual training may now be offered for credit for entrance to the university to the extent of four units.

A four year course leading to a B.S. degree in domestic science and art is to be offered next year. This will mean three years of technical work, including English, with one year of general college work. A student may specialize after the second year, in either science or art. Special students in domestic science have been furnishing lunches for fifty, with great satisfaction to themselves, to the fifty, and to the business manager.

During the past winter the physicians of the Infants' Summer Hospital and the management of Mechanics Institute coöperated in arranging for a course in infant nursing, to be offered during the spring term at the institute, and to be followed by two months' practical experience in the Infants' Hospital. Entrance to the course, it was decided, should require at least a grammar school education, a high school diploma being even more desirable.

Six young women enrolled at the beginning of the term, and are now receiving daily instructions in food values, the preparation and cooking of food for little children, hygiene, child study, household science with simple experiments, and sewing and laundry for the nursery. These lessons are supplemented by a weekly lecture from some local physician on the care of children, children's diseases, etc. Students have opportunity to do practice work in the nurseries of the Rochester Orphan Asylum and the Baden Street Settlement.

While the course is naturally still in its infancy its success is already assured, and it is none too soon to prophesy that by another year, when its possibilities are more generally understood, the capacity of the class will be tested to its utmost.

The domestic science departments recently held an exhibition of household arts. The exhibition was held to show especially the class of work done in sewing, as its superiority and quality are not generally understood.

A number of dainty and well-made dresses made by girls of the eighth grade were greatly admired. These dresses showed great care in matching embroidery with cloth. It had been selected with close attention to suitability, durability, and simplicity of design.

Many caps and cooking aprons, the first machine work done by the classes, were included in the exhibit. The hand work on exhibition from the fifth and sixth grades consisted of cleanly looking holders and little hand towels, each marked with the name of the student who made it. The lettering was in cross-stitching with red cotton.

The beautifully darned stockings and neat patches were said by one of the judges of sewing at the local fair to be far superior to anything entered there.

There has been for seven years a department of domestic science in the Manual Training Auxiliary Normal School at Pittsburg, Kansas. In 1910-11 departments of household science have been established in the Western Branch Normal School at Hays, in the Main Normal College at Emporia, and in the State University at Lawrence.



The work at Hays is under the direction of Miss Agnew, a graduate of the State Agricultural College. That at Emporia is under the direction of Mrs. Beth Warner Mull, with two assistants, Miss Gertrude Flinn and Miss Muriel Williams of Stout Institute, Menomonie, Wis.

Fifteen percent of the high schools in the state have nominal domestic science departments. There is excellent and permanent work being done in the high schools of Kansas City, Topeka, Leavenworth, Iola, Parsons, Emporia, and Wichita and a number of the county high schools. Miss Alta Morgan has charge of the work in the high school at Harper.

The work has received great impetus this year through several avenues: viz. (1) Miss Brown's enthusiastic field work; (2) The establishment of departments in the state university and the Normal; (3) through the appropriation, by this year's legislature, of \$250 from the state fund to be paid annually to any high school which gives the one year normal course and has a course in agriculture, for the purpose of helping pay the salary of an additional teacher for domestic science. It is believed that with the training of more teachers the work will begin to establish itself on a firmer basis.

The second annual meeting was held at Salt Lake City, April 7 and 8, a part of the meetings being at the University of Utah. The program included papers on the following topics: The desirability of a state course of study in Home Economics in the grades and in the high school; school lunches; courses in domestic art for the seventh and eighth grades; courses in domestic science for the seventh and eighth grades; and work in rural communities. A business meeting was held for the adoption of a constitution and formation of a permanent organization.

**Second  
Annual  
Western  
Meeting,  
Teachers of  
Home Eco-  
nomics.**

## BOOKS AND LITERATURE.

**Sociology and Modern Social Problems.** Charles A. Ellwood, Ph.D., Professor of Sociology, University of Missouri. American Book Company. Pp. 331.

In his preface, the author states that "this book is intended as an elementary text in sociology as applied to modern social problems, for use in institutions where but a short time can be given to the subject. . . . The book is also especially suited for use in university extension courses, and in teachers' reading circles."

Almost the first half of the treatise is devoted to a study of the principles of sociology as they are illustrated in the origin, form, and historical development of the family, the family being taken as a typical human institution. The second half of the book comprises a discussion of certain social problems, such as the immigration problem, the negro problem, poverty and pauperism, etc.

These are modern social questions, and the author discusses them concretely. In each case, he presents the situation and then seeks to discover its causes. He states repeatedly that the origin of each social problem, lies not exclusively in any one cause, but is the result of economic, biological, and psychological factors. Especially is he insistent on the fact that economic maladjustment is an inadequate explanation of adverse social conditions.

Dr. Ellwood thinks that there exists in America an exaggerated individualism, and that this trait is appearing in the life of women. This he laments. He over-emphasizes, it would seem, the difference between the sexes, saying that in the male, metabolism is much more rapid than in the female. In a recent book<sup>1</sup> we find the statement that the metabolism of men differs but little from that of women, the variation being due to a difference in weight, size, and muscular activity rather than to any sex difference.

The book may be read with profit by anyone unfamiliar with the principles of sociology and unacquainted with the causes of some of our more pressing social problems. The discussion of these problems is comprehensive and the terminology simple. Several tables of reliable statistics are presented, and conclusions from these are cautiously drawn. The avowed purpose, as stated in the preface, is well carried out.

**Diet and Nutrition of the Filipino people.** V. G. Heiser, Ann. Rpt. Bur. Health, Philippine Islands, 1909, pp. 25-29.

Heat elimination of the body, heat requirements, the kinds and amounts of food consumed by Filipinos, and similar topics are considered, the article as a whole being based on a paper on the Diet and Nutrition of the Filipino People, by H. Aron, assistant professor of physiology at the Philippine Medical School.

<sup>1</sup> Sherman: Chemistry of Food and Nutrition, p. 171.



# T H E Journal of Home Economics

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# THE Journal of Home Economics

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## THE HOME ECONOMICS MOVEMENT IN THE UNITED STATES.

### DEFINITIONS.

A science that has grown, rather than been made, that has expressed itself in various forms according to local needs, whether educational or practical, may well meet puzzling questions when it reaches the stage of formal arrangement and nomenclature.

The Lake Placid Conference at one of its meetings, after lengthy discussion decided on the general term Home Economics, under which to marshal the various courses given under the titles domestic economy, domestic science, household science, etc., in schools of all grades and taught in extension lectures to adults, and to all movements and their literature which tend to improve the conditions of living in the home, the institutional household, and the community.

The word "domestic" was found to have acquired too narrow a meaning except to designate certain courses; "economics" on the other hand, so long studied in colleges as the theory of the production of wealth, has returned to its original meaning which included the regulation of household affairs, the science of wealth consumption, or the use of commodities so as to conserve efficiency. But it was felt that with this term must be used a word that would bring out the deeper significance of our study of modern social conditions. The word "household" was not sufficient. To quote Mrs. Richards: "Home is not merely the house, the shelter which protects from wind and weather, nor is it merely the place where a man hangs up his hat at night or where he has his laundry done, not even the place where he eats and sleeps. Home is the scene of the greatest events of life—

birth, death, joy, sorrow. A palace does not increase its value; a hovel cannot take away the beauty of mother love. Therefore, we prefer the term Home Economics to household science."

Professor Howard of the University of Nebraska<sup>1</sup> says "already, after an astonishingly short probation, the youngest of the new disciplines is before the college council seeking the just terms, the right basis of admission to full academic privilege. It implies that in our country the hour has come seriously to consider the organization and standardization of superior instruction in the field of household science."

And Professor Elwood<sup>2</sup> in speaking before the St. Louis meeting of the American Home Economics Association says, "If household science deals merely with questions of food, shelter, and clothing, then, of course, these questions can be studied quite independently of the home or family as an institution, for we should still need food, shelter, and clothing even though the institution of the family and the private house were abolished, as we understand them. It is only when we assume the family and the private home as necessary social institutions that Home Economics becomes a genuinely social science."

#### A FEW POINTS IN THE HISTORY OF THE HOME ECONOMICS MOVEMENT IN THE UNITED STATES.

*Its Likeness to the Development of the Science of Agriculture*—Any history of those events and efforts which have directly or indirectly tended to the improvement of daily life in the home, its processes, or its ideals is found to be closely interwoven with the history of the development of the new scientific attitude toward agriculture.

Dean Davenport, of the College of Agriculture of the University of Illinois, in an address given at the dedication of the Hall of Agriculture at the University of Maine, recently said, "Agriculture is the only considerable calling in which the home is situated in close connection and in immediate contact with the heart of the business, so that all members of the family—men, women, and children alike—live in the atmosphere of the occupation and each finds some useful part to do as a contribution to the general effort. That is, agriculture is not only an occupation but a mode of life as well, and whatever touches to uplift or to depress the one is bound to react powerfully on the other."

<sup>1</sup>JOURNAL OF HOME ECONOMICS, 3 (1911) No. 1, p. 33.

<sup>2</sup>JOURNAL OF HOME ECONOMICS, 3 (1911) No. 1, p. 44.

It is hardly more than a generation since agriculture was looked on as an industry that could be successfully conducted by methods handed on from father to son, a view still firmly held, by the way, in remote districts, just as there are housekeepers who need no better methods than those followed by their mothers and grandmothers.

Mr. Melvil Dewey in an address at the Lake Placid Conference maintained that housework is despised for the same reason as that for which farming was regarded until recently as a business at which any man, no matter how stupid, could earn his living. The bright boys of the family were sent into the ministry or other professions or to the city to enter business-life, while the less ambitious or efficient member took the farm. The houseworker he maintained was the feminine of farmer and we note in her case the same selective process going on. The girl who could not learn stenography or teach school stayed at home to do the housework. But just as the chemist in his laboratory has decided for the farmer the proper rotation of crops and the exact kind of fertilizer for each, and has given him the balanced ration for the production of milk or of fat in his cattle, thus revolutionizing farming while raising it to the dignity of a profession, by exactly the same application of the results of science in many fields is housekeeping and home-making being put on a higher plane.

*Home Economics in Farmers Institutes.*—The work of Liebig and his followers in Germany had proved before 1850 that there was a science of agriculture, and students of the subject, many of them trained in Europe, began to urge the application of accumulated data to methods of agriculture. Local farmers clubs were organized in Connecticut, New York, Massachusetts, and Maryland nearly three-quarters of a century ago and other localities soon followed. State organizations were impossible at a time when an entire state such as New York contained less than one hundred miles of railroad. Much later came the National Grange and state organizations known as the Farmers' Institutes. To quote from a letter from Mr. Stedman, Acting Farmers Institute Specialist of the United States Department of Agriculture: "The exact date when farmers' institutes were organized will never be known because they were an outgrowth of spasmodic lectures by different organizations, and only gradually came to be recognized as farmers' institutes. As regards women's institutes practically the same holds true. Nobody seems to know exactly the year when women's institutes first started. They likewise were a gradual outgrowth from the farmers' institute work, women having attended



the meetings from the beginning and gradually sessions were held especially for women, and it was not until very recently that any attention was given to the matter as having a distinct field or that these women's sessions became organized as so-called women's institutes."

In 1908 732 meetings for country women were held by the farmers' institute directors in the several states.

The National Grange, founded in 1866, in its first "declaration of purposes" stated that the first object of the order was "to establish a better manhood and womanhood and enhance the comforts and attractions of our homes." From the beginning there seems to have been a place on the Grange programs for the discussion of home topics and it is stated that in late years the scientific presentation of them by the lecturers has been made very prominent. The National Grange Monthly has helped to meet a rapidly growing interest in Home Economics.

*United States Government Work for Home Economics.*—Under the title United States Government Publications as Sources of Information for Students of Home Economics an article by Dr. C. F. Langworthy appeared in the June, 1909, number of this JOURNAL. To this very valuable summary we will refer our readers.

The history of the rise and extension of this work, especially in the study of nutrition, is a most interesting one and will well repay study. The same author has prepared a paper on the Origin and Development of the Nutrition Investigations of the Office of Experiment Stations, United States Department of Agriculture, and it may be found in the Report of the Office of Experiment Stations for 1910.

A perusal of these articles shows that our debt is especially great to Professor W. O. Atwater who did the first work in this country in the examination of food materials by modern methods. He was the director of the first state agricultural experiment station in 1875 at Middletown, Conn., and in 1887 was made director of the Connecticut Storrs Agricultural Experiment Station where for fourteen years under his direction very valuable work was done. At the same time he directed the work of the Office of Experiment Stations when it was established (1887) and in 1889 that Office began the publication of the Farmers' Bulletins of which some 450 have now been published in editions that have reached in many cases hundred of thousands.

*The Study of Nutrition.*—A matter of prime importance to this movement must be reckoned the advances in the study of human nutri-

tion in this country. They have been based on similar work done in Europe where the beginning was made in the study of farm animals. The great name of Liebig is always to be remembered in this connection, and in the matter of practical application we date back to that remarkable man of American birth, Benjamin Thompson, Count Rumford, who in the work which he undertook for the King of Bavaria a century and a quarter ago revolutionized the army dietary and that of the poor who were dependent on public aid. A full account of his work is being prepared for publication in the JOURNAL.

The pioneer student of nutrition on the physiological side in this country was probably John R. Young, who in 1803 wrote for his doctor's thesis at the University of Pennsylvania Medical College a monograph entitled *An Experimental Inquiry into the Principles of Nutrition and the Digestive Processes*. An account of the man and his work was given by Prof. L. B. Mendel<sup>1</sup> and this account was reviewed by Miss Ellen A. Huntington in the June, 1909, number of the JOURNAL (p. 255).

Next in point of time comes George Stanton Gould, who in 1852 at the request of the Board of Commissioners of Immigration, published the report of an extended study of dietary and other conditions in public institutions entitled *A Report of Food and Diet with Observations on Dietetic Regimen Suited for Almshouses, Prisons and Hospitals, also on Heating, Ventilation, etc., with Practical Recommendations*. For an extended account of this early investigator, who based his work on the writings of Liebig, Magendie and other Europeans, see an article by Dr. C. F. Langworthy in the June, 1910, number of the JOURNAL.

We must also note W. Tully's *The Nature and Uses of Aliment in the Animal Economy* (a communication to the Medical Society of Connecticut at New Haven, in 1810, Vol. I, pp. 27-43), a general article on food and its functions; S. B. Hunt's *Remarks on the Constituents of Food and Drink* (*Buffalo Medical Journal*, 1854, pp. 455-457); and Helen C. DeS. Abbot's chemical study of *Yucca angustifolia* (*Trans. Amer. Phil. Soc.*, 1886, pp. 254-284), this last named being interesting because it employs methods of food analysis at a rather early period in the work, but particularly because it shows that women were doing laboratory work at the time. From this time on the work grew rapidly, but it has all been recorded in the publications

<sup>1</sup> Popular Science Monthly, 74 (1909) p. 174.

of the United States Department of Agriculture before referred to, and for valuable summaries the JOURNAL is indebted to Dr. C. F. Langworthy.

*The Teaching of Home Economics.*—We open a quaint chapter of almost medieval history when we seek for the first dates in the formal teaching (outside of the family circle) of the household arts. In 1668 François de Laval, the first bishop of Canada, according to Parkman in *The Old Régime in Canada*, founded near Quebec a kind of farm school for French and Indian boys and here various mechanical trades were also taught. At the same time the Ursulines and the Nuns of the Congregation of Quebec undertook the training of girls along the lines of manual training and what is now grouped under the head of Home Economics, so that formal education in this subject there had its beginning. To quote Parkman "we find the king giving to a sisterhood in Montreal a thousand francs to buy wool and a thousand more for teaching girls to knit."

That there was crying need for improvement in the arts of life both within and without the primitive home Parkman gives us abundant proof, but we do not learn whether these early efforts had any successors.

In the early dates that we have been able to gather in New England (see p. 336), one is so very important that it must be singled out. In 1841 Catharine Beecher published her *Treatise on Domestic Economy* as a part of the Massachusetts School Library, a book which, as the author tells us, was "extensively introduced as a text-book into public schools and higher female seminaries." It was followed by its sequel, *The Domestic Receipt Book*, which it seems was "widely circulated by the Harpers in every state of the Union." In 1870 Miss Beecher and her sister Harriet Beecher Stowe issued an enlarged edition of the treatise entitled *Principles of Domestic Science as applied to the Duties and Pleasures of Home*, and here we find the whole duty of woman set forth with much pity and good sense.

These books, long since out of print, belong to the classics of Home Economics literature. Mrs. Richards in her address at the Tenth Lake Placid Conference spoke of Catharine Beecher's forgotten book as the true beginning of the Home Economics movement.

A review of these really remarkable books is being prepared for the JOURNAL. We will give but a small abstract from the *Treatise*—"The author of this book was led to attempt it by . . . the deplorable sufferings of multitudes of young wives and mothers from



the combined influence of poor health, poor domestics, and a defective domestic education. The measure which more than any other would tend to remedy this evil would be to place domestic economy on an equality with other sciences in female schools."

*Home Economics in Higher Schools for Women.*—Long before Miss Beecher's time the need for teaching the household arts had been recognized by at least one educator of advanced views. In 1814 when Mrs. Emma Willard founded her Female Seminary in Troy, N. Y., and printed her Address to the Public, particularly to the Legislature of New York proposing a Plan for Improving Female Education, she discussed in it the defects in the system of women's education and included in her plan domestic, as well as literary and religious, education. She says "Housewifery might be greatly improved by being taught not only in practice but in theory. Why may it not be reduced to a system as well as other arts?" But in her efforts to introduce the teaching of this branch in her school she met with opposition.

Mr. Henry Fowler, in his article on Educational Services of Mrs. Emma Willard (in Henry Barnard's *American Journal of Education*, 6, 1859, pp. 125-168), says: "While thus Mrs. Willard was teaching what had heretofore been considered masculine studies, and thus risking the displeasure of those wealthy and fashionable people, on whom, disappointed of public aid, she much depended for support, she was also testing her popularity by the steps she was taking to induct her pupils into the duties of their sex, in regard to housekeeping; as this might be charged with a degree of vulgarity." In a footnote he adds:

"In general, when the graduates of the seminary develop into women of society and mistresses of families, they have been found imbued with the principles, and having acquired the habits which lead to good housekeeping. The pupils in their small rooms, each occupied by two inmates (carefully assorted, as one of the most delicate duties of the principal) are provided with closets, bureaus, etc., so that everything can be used for its proper purposes, and everything kept in its proper place. And they are under a strict surveillance, as each in turn is to keep the room in perfect order. This is that their eye may become accustomed to order, so as, of itself, to detect the reverse. They are required to keep in order their own clothing, and have a set time for mending. They took their turns also with the domestic superintendent, to learn pastry cooking. Each roommate is in turn room-keeper for the week and liable to a fault-mark if the monitress,



in her hourly rounds, during school hours, finds anything out of order."

Miss Beecher, in her Treatise, describes in terms of the highest commendation the course in domestic economy taught at Monticello Female Seminary at Alton, Ills., an institution that held high rank and was called the Mt. Holyoke of the West. Each pupil was required to spend two hours a day in domestic employment, an amount sufficient to accomplish all the work for a family of eight except the cooking. She describes the work in the model laundry, where the young women learned the art under a competent instructor.

Mt. Holyoke Seminary, founded by Mary Lyon in 1837, announced, as we find in the reproduction of the tiny first annual catalogue, that all the members of the school were to aid to some extent in the domestic labors of the family "because it is difficult to find hired domestics and to retain them any considerable time when found, and because young ladies engaged in study suffer much in their vigor and intellectual energy for the want of exercise," but it is then added, "it is no part of the design of this Seminary to teach young ladies domestic work. This branch of education is exceedingly important, but home is the proper place for the daughters of our country to be taught this subject."

Eighteen years later when Elmira Female College received its charter from the State of New York, the first catalogue (1855) states that each student is "required to take additional work in domestic science and general household affairs." To quote: "There is an arrangement by which domestic science will be taught to each pupil. The more severe parts of the work will be performed by domestics. A lady peculiarly fitted to give instruction in domestic science has been engaged and has under her direction the students who are drilled in all that pertains to domestic duties." Such work was called supplementary and as it does not appear in the curriculum with other branches of study there is no means of knowing just what it comprised. It was probably nothing more than housework well taught and supervised. After some ten years it seems to have given way entirely before the growing belief that the regular college studies required the entire time of the student. "Domestic science" was still a misnomer for no connection had been made between household processes and laboratory methods and results.

Vassar Female College, which received its charter from the same state and opened its doors in 1865, seriously discussed the introduction of this branch under still another name for we find the question

"How teach the theory and practice of domestic economy?" as number eleven in a series of questions addressed in 1861 by President Jewett to various educators. The first Vassar prospectus issued in 1865 gives the subject extended notice. Here the struggle between the old and the new comes to the front. "The household is, by common consent, woman's peculiar province. The art of administering its various economies therefore is among the least dispensable of her acquisitions." But on the other hand, "Home is the proper school for this art." "The trustees are satisfied that a full course in the arts of domestic economy cannot be successfully incorporated in a system of liberal or college education." After a statement to the effect that "it is dangerous to withdraw a young lady from home and allow her to form tastes and habits tending to unfit her for her allotted sphere," a compromise is offered: (1) Domestic economy is to be taught theoretically by text-book and lectures; (2) visible illustrations are to be furnished by the college kitchen, larder, dining room; (3) personal instruction is to be given to every one who needs it as to care of her clothing and room; (4) there will be regular hours for sewing.

No doubt this concession allayed the fears of timorous opponents of higher education for women, but without the scientific backing which now gives meaning and value to courses in Home Economics these half-hearted attempts at teaching a trade could not hold out against the determination of women that their colleges should give not only equal but identical training with those of men. In three years hardly a vestige of this work remained.

In 1877 Lasell Seminary in Auburndale, Mass., offered courses in cookery, applied housekeeping, sewing, dressmaking, and millinery, courses which were continued and developed under such pioneers as Miss Parloa, Miss Daniell, and Mrs. Lincoln. Here there was no question of conflict with college standards and these courses were not abandoned.

In 1890 began the first real attempt to introduce college courses in Home Economics which should be on a scientific basis and deal with principles rather than with the repeated performance of the details of a trade. This was at Wellesley College under Miss Marion Talbot, who gave lectures and conducted laboratory work on sanitation and dietetics. The work was kept up for two years but was discontinued when Miss Talbot became Dean of Women at the new University of Chicago where she offered similar instruction.

Before this time (see p. 336) the agricultural and other colleges

admitting both men and women had made great strides in the teaching of Home Economics. It is not within the scope of this article to follow the rapid developments of the later years.

From the beginning of the Lake Placid Conferences the work of formulating and introducing into our system of education, especially into the public schools, proper courses in the various subjects included under Home Economics has been the chief interest of its leaders.

Dates of such introduction have been carefully arranged chronologically elsewhere in this number (see p. 336) and papers dealing with various phases of the question may be found in the published proceedings of the Lake Placid Conferences and in every number of the *JOURNAL* in the three years of its existence. At first slowly, and of late years rapidly, courses have been introduced into the public schools in nearly all of our states, into many private schools, into all of the agricultural colleges which admit women, into many state universities, and also into the normal schools, as the training of teachers for this branch early became a necessity. The List of Institutions in the United States giving Instruction in Home Economics, a valuable article by Miss Marie T. Spethmann appearing in the June, 1911, number of the *JOURNAL* occupies some 30 pages and even then does not include schools for Indians and colored people.

For the last quarter of a century, at every point in this long struggle for recognition of Home Economics Mrs. Richards was the general directing the forces. What she felt marked the successful termination of this effort for recognition was her appointment to the Council of the National Education Association in 1910 as vice-president of the Manual Training and Art Section in order that she might supervise the teaching of Home Economics in the schools of the country during the six years to come. For some ten years this branch had been given a place in connection with other departments, but the work had been desultory. Mrs. Richards felt that the formal recognition of Home Economics by the national body was most important and that it would soon be followed by the granting of credits on a level with other studies. That this is already at hand is evidenced by the report made at the San Francisco meeting of the National Education Association in July last by the committee on The Articulation of the College and High School. This report recommends that fifteen units—each unit representing a year's study in a certain subject—be the quantitative requirement for entrance to college. Qualitatively, of the total fifteen units, not less than eleven units should consist



of English, foreign languages, mathematics, social science, natural science, or other work conducted by recitations and home study. The other four units should be left as a margin to be used for additional academic work or for mechanic arts, household science, commercial work, or any other kind of activity that the best interests of the student appear to require.

With the full acceptance of these branches of study as being, when properly taught, "mentally nutritive," effort ceases along certain lines and concentrates on those far more important. These courses are now to be made more vital, more in touch with the best scientific thought. In short, the Home Economics movement has entered on a new phase.

*Home Economics in Women's Clubs.*—Home Economics in the General Federation of Women's Clubs is thus described by the president of that organization, Eva Perry Moore.

At Louisville, in 1896, Mrs. John Vance Cheney gave a talk upon Home Economics. In Denver, 1898, greetings were brought from the National Household Economics Association. In Milwaukee, 1900, there was a special department under Mrs. James H. Whitmore of Denver, Colorado, but no work was reported from clubs. Mrs. Walter McNab Miller spoke at that time. In Los Angeles, 1902, greetings were brought again by Mrs. Linda Hull Larned, of New York State, from the Household Economics Association.

In St. Louis, 1904, the department came again to the front, with Mrs. A. C. Neville as Chairman, who presented a report, but with very little return from the states. In St. Paul, 1906, the department was thoroughly organized, and Mrs. Mary Moody Pugh of Omaha, Nebraska, was Chairman. In Boston, 1908, Mrs. Margaret J. Blair, of St. Paul, Minn., was the Chairman. Mrs. Decker felt that the department was far from successful and should be carried on rather in the states than in the General Federation. She made the recommendation that it should be abandoned, but this was lost, and it has been most successfully carried on since that time by Mrs. O. N. Guldlin.

Mrs. Richards did not come into the work until Mrs. Miller was appointed Chairman of the sub-committee of Household Economics called Food Sanitation. I think Mrs. Richards was identified with her from the beginning in all the work that she attempted, and she was asked particularly to speak, as was Mrs. Abel, at the meeting in Boston,



in 1908. Mrs. Richards has been a most helpful force in all of Mrs. Guldlin's work.

Reports for 1910 recently received furnished the following statistics as to the present status of the movement: During the last two years 720 clubs held one or more sessions on Home Economics; 371 clubs have Home Economics departments; 278 have regular lectures, demonstrations, or short courses; 257 helped materially in creating sentiment that established Home Economics in the public schools; and 104 did some kind of philanthropic or educational work in Home Economics in cities.

*Home Economics in the Association of Collegiate Alumnae.*—The following data are furnished by Professor Marian Talbot of the University of Chicago:

Mrs. Richards was the guiding spirit in the formation of the Association of Collegiate Alumnae in 1881. In this organization the first subject considered was the health of the college students, and Mrs. Richards was in part responsible for the first circular issued. This presented the low standards of the colleges in regard to physical education and made a strong plea for attention to the physical basis of the college student's life. This was followed by a leaflet, *Health in Preparatory Schools*, with blanks to be filled in by teachers and parents.

The records of this association show that in the following year she led in a discussion on *The Effect of the Amusements and Occupations of Girls in their School Life*.

She was one of the members who organized the Sanitary Science Club of the association and published in collaboration with Marian Talbot the book *Home Sanitation*. By this time her conviction that the scientific aspects of housekeeping must receive more attention from women had become firmly fixed and she continued to keep the subjects before the association. In 1890 she presented a paper on *The Relation of College Women to Progress in Domestic Science*, and close upon this followed *Household Industries outside the Home*, practical suggestions for Applied Economics and Sociology in the College Curriculum, and *Desirable Tendencies in Education for Women*. In 1901 as chairman of the committee on Home Economics of the Boston Branch she helped raise a scholarship of \$400 for the Boston School of Housekeeping and arranged an exhibit of contributions of college women to Home Economics. Later this was

developed into the Mary Lowell Stone Home Economics exhibit which was for two years under the charge of the association and its branches. Her best work in this direction for the association was as chairman of the committee on euthenics, the aim of which was to suggest immediate and practical ways of increasing the efficiency of the individual.

*Graduate School in Home Economics.*—This school had its origin eight years ago when Professor Atwater of the Office of Experiment Stations opened his laboratories at Middletown, Connecticut, to teachers of domestic science, inviting them to study there four weeks and to get in touch with the investigations in nutrition which the government was making. It chanced that in that same year a call was given for graduates in agriculture to gather at Ohio State University, to do advanced work and in these two meetings the graduate schools of Home Economics and agriculture had their beginnings. No further sessions of the schools were held until 1906, at which time the American Association of Agricultural Colleges and Experiment Stations decided to assume control of the Graduate School of Agriculture and to make it a permanent institution which should hold biennial sessions in different colleges of the United States.

Fortunately for the Home Economics movement, the place selected for the next meeting of the School of Agriculture was the University of Illinois, where Professor Bevier had already developed a strong course in Home Economics. Through her efforts and the generosity of the university a Graduate School in Home Economics was held in connection with the School of Agriculture. From that time on the two schools, which are similar in purpose yet sufficiently different in the subjects which they present to offer an interesting interchange of attractions, have met together. They met in 1908 at Cornell University and in 1910 at the Iowa State College of Agriculture.

By vote of the American Home Economics Association at its St. Louis meeting the Graduate School of Home Economics has now become a part of the Association activities. Plans are now being formulated for a 1912 session at the Michigan State Agricultural College.

## DATES AND EVENTS IN THE HISTORY OF THE HOME ECONOMICS MOVEMENT.<sup>1</sup>

- 1789. Girls in Boston public schools are allowed to spend some school time on needle work under direction.
- 1821. Mrs. Emma Willard begins the teaching of household arts in Troy Female Seminary.
- 1835. Boston girls of second and third grammar grades are taught sewing.
- 1840. Catharine Beecher wrote *A Treatise on Domestic Economy*.
- 1854. Sewing is extended to the fourth grade in Boston schools under a special instructor.
- 1859-60. Prof. Blot gives lessons in cooking in several large cities.
- 1862. Federal land-grant (Morrill Act) passes for colleges "to teach such branches of learning as are related to agriculture and the mechanic arts in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."
- 1870. Massachusetts legislature passes an act making drawing obligatory in the public schools of the State. This marked the beginning of industrial training.  
Miss Clare de Graffenried studies household budgets of Lowell factory mill workers. An act of the Massachusetts legislature legalizes sewing and other industrial education in the towns and cities of the state.
- 1872. The Woman's Education Association is formed in Boston with standing committees on industrial, esthetic, moral, and physical education.
- 1873. Sewing is introduced into Kansas State Agricultural College. Miss Corson first gives lessons in New York City.  
A teacher of sewing is appointed in the Winthrop School, Boston.
- 1874. Sewing is given in the Vacation School, Providence, R. I.  
Starting point of the New York Cooking School under the management of Miss Corson.  
Joanna Sweeney gives lessons in cooking in Boston.

<sup>1</sup> This list of dates is known to be very imperfect and the editor hopes to receive many corrections and additions. Manual and industrial training has been intimately connected with the development of Home Economics, and dates of its introduction into the educational system have therefore been admitted.

1875. Domestic science with lectures on the chemistry of cooking is introduced into Kansas State Agricultural College under Mrs. Nellie Kedzie.
- 1875-6. Domestic science with a four years' course is introduced into the University of Illinois.
1876. At the State Agricultural College of Iowa a department of domestic economy is introduced through Mrs. Mary B. Welch, the first teacher.
- School of Mechanic Arts founded in Boston by vote of the corporation of the Massachusetts Institute of Technology.
- Miss Parloa's first public lecture, in New London.
1877. Lasell Seminary opens courses in domestic science under Miss Maria Parloa.
- Manual training is advocated in Rhode Island schools.
- The Industrial School Association of Boston starts a school.
- The object of the society is to demonstrate the practicability of industrial training in the public school.
- The Woman's Education Association of Boston establishes a school of carving, modelling, etc., with the same object as the school of the Industrial School Association.
- Miss Parloa gives her first lecture in Boston, and holds private classes, giving impetus for Boston Cooking School.
- Miss Emily Huntington makes, in New York, the first experiment in kitchen gardens.
1878. Miss Devereau (a pupil of Miss Parloa) goes to teach cooking at the New Century Club, Philadelphia.
- An experiment is begun in Gloucester, Mass., with a view to introducing manual training into the public schools.
- Miss Corson gives lectures to some nurses in Washington, D. C., also lectures in Indianapolis, Ind.
1879. Mrs. Rorer takes charge of the cooking in the New Century Club, Philadelphia.
- Miss Parloa gives lessons at the Chautauqua summer school.
- The Woman's Education Association, Boston, opens the Boston Cooking School.
- Raleigh, N. C., cooking school is established by Mrs. Helen Campbell.
- The subject of industrial education is brought before the city council of Boston, but the proposition is defeated.
- Miss Corson gives lessons in Peoria, Illinois.



1880. The Kitchen Garden Association of New York is incorporated. In Boston, cooking is first taught to public school children, under the auspices of the Y. W. C. A. Manual training is offered for both sexes in the schools of Montclair, N. J.
1881. In Peru, Ill., sewing is taught girls in the public schools. First mission school of cookery is opened in Washington, D. C. A kitchen garden is introduced by Mrs. Hemenway in a summer school in Boston. The first manual vacation school is also opened. First legislation in New Jersey on Manual training. The report states that sewing had been taught in the schools for several years before this date.
1883. Rose Polytechnic Institute opened at Terre Haute, Ind. Sewing is taught in the public schools in Springfield, Mass.
- 1883-4. Vacation schools in manual training are held in Boston and Brookline. Instruction in the industries is deemed most desirable for women.
1884. The Industrial Education Association of New York is formed from the Kitchen Garden Association. Girls are taught domestic science in the Toledo High School. The first industrial training for girls in a public high school.
- 1884-5. An epoch in the New York public school system—the appointment of a committee of the Board of Education to plan ways and means on industrial studies. Report from New Haven, Conn. Manual training for boys and girls is now being extended through all the grades. T. A. Litchfield, of Newport R. I., recommends that the city council make provision for sewing for girls and carpentry for boys. In Minneapolis, Minn., the subject of industrial education brought before the school board. Industrial training is taken up in the Normal School in Philadelphia and in Salem, Mass. In Oakland, Cal., the committee on industrial education resolves to make an experiment in introducing cooking into the public schools.
1885. First report of the New York Industrial Education Association. Fifteen classes in domestic science are held in private schools and girls' clubs.

Two cooking schools for girls are opened in Boston, one by Mrs.

Quincy A. Shaw and one by Mrs. Mary Hemenway.

South Dakota Agricultural College organizes a four-year course for women leading to the B. S. degree.

Mechanics Institute, Rochester, N. Y., is opened.

One grade of the high school, San Francisco, Cal., is taught domestic economy one hour a week.

1885-6. Provision is made for industrial training in Iowa.

The question is agitated in Portland, Maine.

Industrial work in the grades is given in Madison, Wis.

1886. The second annual report of the Industrial Education Association of New York shows great progress in the work. Industrial classes in the public schools of Hoboken, N. J., are started under the influence of the above association. The association opens a house with an information office on 11th street and teaches public school children and teachers, also conducts a school for servants, and a graded course in sewing. The first vacation classes in New York are begun under the association.

A children's industrial exhibit in New York is organized by the association. Specimens of work from Chicago, Cleveland, St. Louis, Philadelphia, Boston, Worcester, and other centers had marked influence in spreading the work. The association leases the former building of Union Seminary at University Place and opens it December 4.

1887. The New York College for Training Teachers is organized by the association with Nicholas Murray Butler as president. This later became Teachers College, Columbia University. The training of teachers for Home Economics is emphasized.

The Newport (R. I.) Industrial School for Girls is started.

The beginning of Pratt Institute is made.

Manual training is introduced into the public schools of Washington, D. C., this including drawing, sewing, cooking, etc.

The Boston Public School Board accepts Mrs. Hemenway's school under the name of Boston School Kitchen No. 1.

1888. The Boston Normal School of Household Arts is established by Mrs. Hemenway.

Legislation in New York State empowers local school authorities to establish manual training departments. The state

- normal school is required to include courses in the principles underlying manual training.
- A course in manual training is initiated in the Boston public schools (primary) by Louisa P. Hopkins.
1889. The New York Kindergarten Association is formed.
- The Eliot School, Jamaica Plain, Mass., offers instruction in woodwork to public school pupils.
- Dr. Edward Atkinson publishes a description of the Aladdin Oven, the forerunner of the fireless cooker, and other devices for cooking at a low temperature in an insulated chamber.
1890. The New England Kitchen is started in order to apply scientific principles to the cooking of the cheaper food materials. Manual training is ordered in all primary schools of Boston.
- 1890-1. A course in sanitation and dietetics is introduced into Wellesley College under Miss Marion Talbot.
1891. Drexel Institute is founded.
- The City Council of Boston makes an appropriation for the Mechanics Arts High School.
- A cooking and sewing school for children, selected from the public schools, is established in Baltimore, Md., by members of the Society of Friends.
1892. The New England Kitchen, Boston, forms classes under Miss Maria Daniell for study of economics and sanitary cooking.
1893. Armour Institute is opened.
- A course in Home Economics is offered at the University of Chicago.
- The National Household Economic Association holds its first of ten annual meetings in Chicago (see *JOURNAL OF HOME ECONOMICS*, April, 1909, p. 185).
- 1893-4. Mrs. Helen Campbell, appointed lecturer on Home Economics, University of Wisconsin extension course.
1894. The Boston School Board votes "that only such foods as are approved" by them "shall be sold in the city school houses." Luncheons prepared at the New England Kitchen under supervision of Mrs. Richards are served at nine high schools. (see *JOURNAL OF HOME ECONOMICS*, April, 1910, p. 181.)
- The Nutrition Investigations of the United States Department of Agriculture are authorized by Congress and work is begun

- under direction of Prof. W. O. Atwater under the auspices of the Office of Experiment Stations. The work centered in Middletown, Conn., and involved coöperation with Wesleyan University, the Connecticut (Storrs) Experiment Station, and other institutions.
1896. The Thomas S. Clarkson Memorial School of Technology is founded at Potsdam, N. Y., with a four year course in domestic engineering.
1897. The University of Tennessee introduces domestic science. The University of Idaho introduces domestic science. The School of Housekeeping in Boston is founded by the Women's Educational and Industrial Union.
1898. The beginning of domestic science in St. Louis public schools. A summer course of lectures on house care is given to the teachers of cookery in the Boston public schools.
1899. The Lake Placid Conference holds its first meeting at Lake Placid, N. Y., September 19-23. Annual meetings were held until 1908.
1902. Simmons College opens and adopts School of Housekeeping.
1903. The Manhattan Trade School for Girls is founded. In 1910 it is made a part of the New York City Schools. The Household Aid Company of the Woman's Education Association of Boston began its experiment in furnishing trained household workers by the hour.
1905. The Boston Trade School for Girls is established. The first meeting of the Teaching Section of the Lake Placid Conference on Home Economics is held at Pratt Institute.
1906. The Nutrition Investigations of the Office of Experiment Stations, U. S. Department of Agriculture, are transferred from Middletown, Conn., to Washington, D. C., and reorganized under the direction of Dr. C. F. Langworthy.
1909. The American Home Economics Association is organized at Washington, D. C.



## MRS. RICHARDS AND THE HOME ECONOMICS MOVEMENT.

MARY H. ABEL.

*Mrs. Richards' Scientific Training.*—It is of first importance to note the broad training which Mrs. Richards brought to the service of Home Economics. She was wont to say "the fundamental requirement for progress in applying science is the acquisition of science to apply." If we scan the many papers published and unpublished that she has left behind we find very many of them sounding this note. She urged in season and out of season the study of science by women and she gave her strength to investigation along broad lines, largely municipal and educational.

Strange as it may seem to some of the readers of the JOURNAL, her work in Home Economics until her later years was confined to occasional talks and papers in her "play-time" outside her regular work. Home Economics has never been taught by her or by any one else at the Institute of Technology and Mrs. Richards' classes were not made up of women.

In her college life her interest in science was awakened, in the department of chemistry by Professor Charles S. Farrar, and in astronomy by Professor Maria Mitchell, but chemistry with its important bearings on practical life was destined to absorb her attention. In Mrs. Richards' first year in the Institute, John D. Philbrick, the noted school superintendent of Boston, watching her work in the chemical laboratory said to her: "What good do you expect this will do you in the kitchen?" This brusque inquiry while it irritated the young scientist also set her to thinking. "Why, indeed, should not chemistry be applied in the household?" From this time on the desire to apply science to the improvement of daily life grew and she became more and more prepared to meet opportunities as they offered themselves. Her first work in this line was in sanitation, a subject that never ceased to engage her liveliest interest. To quote Prof. H. P. Talbot of the Institute of Technology:

"Her contributions to sanitary science are so many and important that they would seem of themselves to constitute a sufficient achievement for a busy life."

It was on account of the discipline and training furnished by her scientific work that Mrs. Richards was enabled to guide the new applied science so wisely and to keep its standards on such a high plane. Dr. Langworthy has said that Mrs. Richards' work for Home Economics may well be compared with that of Liebig's for agriculture. "To Liebig belongs the credit more than to anyone else for bringing together isolated facts and adding to them so as to produce the new subject of agricultural chemistry, which is almost the same thing as saying 'agriculture' as we understand it at the present time. In the same way Mrs. Richards more than anyone else brought together a great many known facts and added a new member, Home Economics, to the group of subjects which a man or a woman may select for serious study as well as for practical application. I suppose that this is what always happens when a new branch of learning is definitely established. Someone must have brought together a great number of facts from mathematics and physics and other subjects to mark off the bounds of the subject of mechanical engineering. Home Economics is a subject worthy of comparison with others which have been recognized for a long time, as evidenced from the fact that it may be approached in the same way as older subjects, namely, from a scientific, from a technical, and from a practical standpoint."

*The Home Her Chief Interest.*—It is not too much to say that in her later years one thought and interest so predominated in Mrs. Richards as to make it the center. She considered the American home the most precious development of civilization, and to preserve its essentials while helping to adjust it to the demands of our age became with her an absorbing passion. It is the cradle of the child, the resting place of old age, the retreat in which the worker is to be refreshed physically and spiritually for the day to come. If ruled with firmness and love and intelligence it becomes the nursery of all the virtues, something unspeakably precious in the world. In her view this ideal became the meeting point for all movements—all roads led to this desired end.

Thus, health in the individual as the foundation of efficiency becomes a pre-requisite, therefore every move toward hygiene, public and private, pure water, well ventilated school rooms, healthful dress and well constructed houses all have a definite relation to the home. The food becomes a prime factor and to its choice and preparation constant attention must be paid, importance also attaches to good form and color in furnishing and that orderly life so steadying to the nerves.

And as more and more effort must center on the woman who is to rule this home, and education becomes so important as to overshadow all other issues, the education of the mature woman through extension courses—in clubs, in Farmers' Institutes, through the press, but most of all the education of the woman of the coming generation, as she is passing through the schools.

This attitude explains the apparently diverse character of the subjects that have been admitted under Home Economics. Welcome all that has to do with education of hand and eye, especially in its application to daily life, courses in applied sociology which set the family in its true place, and that side of economics which has for its theme consumption of wealth rather than its creation, with the satisfaction of wants and the comparison of values all of which has so large a place in the family life.

Having in mind this broad foundation, she welcomed the entrance of women into industry and the training for it, not alone because it had become an economic necessity but because in no other way can the worth of the woman's time in the home have the proper value put upon it. She did not say in the old way to the women "stay in your home"—she realized, none better, that the woman of today could not learn inside those walls that adjustment to the new time which would be required of her. Hence her sympathy with women who studied methods in the world of business and tried to apply them to the technical side of housekeeping. She had great confidence that the young woman and especially the young college woman, because of her general training, would yet be the best housekeeper and home maker. "We are trying to adapt ourselves to changed conditions," she said. "Do not let any one frighten or browbeat you out of that position."

She held the view that industrial changes had so profoundly altered the home environment of a generation ago that the teaching of the housewife and mother must be taken up by the school in order that the best methods of sanitary science should be at the service of the people. Even the care of babies, once considered to come to a mother by the light of nature, she urged long ago, when the idea was so new as to shock the conservative, should be taught in regular classes to all girls and women.

She held that the most valuable part of our American citizens are in that million or more groups in which the man of the family earns enough to keep the house, and where the woman, put beyond the



need of doing all the housework with her own hands, has the power of choice as to what she shall do with a part of her time. Will she ably supervise the work and instruct in the best methods, give that time and thought necessary to develop the home spirit and hospitality, see that all the expenditures, including those for the higher life, are planned to come within the income—so that all the needs of the different members are met—will she develop, in fact, that administrative talent which rules and utilizes all?

Thus along an immensely extended line she watched the struggle of the new with the old. She was a true general, taking every coign of vantage, adhering to no preconceived plan if a better was presented. Unperturbed she accepted failure in one quarter and threw her forces into another. At one time all her interest seemed to center around the food question, as in the years when she watched over the New England Kitchen and all that grew out of it; then the question of housing absorbed her attention, but no former interest was shelved. She was an opportunist, she followed whatever line of a dozen good ones was most open at the moment, and was quick to seize an opportunity, as when the time was ripe and the means at hand for the introduction of lunches properly chosen and cooked into the public schools of Boston. She was never deterred by that bugbear of small minds, the fear of inconsistency.

None knew better than she the many ways in which public opinion was to be moulded and the attention of the community drawn to Home Economics. Eminently social in nature she was personally acquainted with an immense number of people representing many groups and interests, and they all learned through her something of this new applied science and many became in their turn radiating centers of interest and knowledge in their different communities. Her own talks given in many regions always sowed live seed.

Every opportunity in the educational field was utilized and her persistence conquered many an apparently hopeless situation. In 1901 Miss Alice Ravenhill was sent by the Technical Instruction Committee of West Riding, Yorkshire County, England, to study the methods of teaching Home Economics and hygiene in this country. This very fact, bringing as it did the stamp of approval of such studies from an older civilization, Mrs. Richards was ready to utilize to the utmost, and in the person of Miss Ravenhill, highly cultivated and full of enthusiasm, she found a firm ally. It was determined that Miss Ravenhill should go with Miss Marlatt to the National Education



Association meeting in Cleveland in July of that year, and appear at a round table where the subject of Home Economics would have an opportunity to plead for a department of its own on the yearly program. This plea, given with great skill by both of the envoys, proved to be the entering wedge.

For all this work she needed and she possessed the complement of her scientific training, her practical knowledge of living conditions. This knowledge was thorough and had been gained at first hand. She had spent her youth on a New England farm and in her subsequent years passed in a large city and in extensive travel she had watched the changes wrought in the life of town and city. As Professor Sedgwick said, "Other women may become experts in water analysis and preside over laboratories but no one hereafter can possibly gain the peculiar historic equipment which fell to Mrs. Richards. Other women, may, and no doubt will, make addresses and write books upon sanitation and homes, but no one else can ever do these things as Mrs. Richards did them, for the reason that she was herself an evolution and represented an epoch."

In her dealings with people, Mrs. Richards was large and tolerant. One did not have to be wholly deserving to get her help, nor wholly efficient in order to be admitted to her band of workers. All were welcomed and put on trial. Her practical sense noted instantly qualities or lacks that would affect efficiency for a given post or work, her judgment seemed to be entirely impersonal. "Learn to look at people for what they can do, not for what they cannot," she once said and it taught a great lesson. She could utilize many grades of service, and only double dealing or treachery wholly discredited a person in her eyes. She had the gift of silence, but anyone who wanted to know the truth of her, to get the "honest answer" was never disappointed.

She had watched so many movements, she knew so well at what waste and loss progress is made, that she was never impatient or despondent over failures and delays. She did her own part, however, with unwearied care, she never disappointed those with whom she worked, she was reliable to the last degree.

The full explanation of her great influence was due to many qualities which combined to make her the most helpful of friends and counsellors. "She never failed me." "The news of her death was such a shock that for a while I felt that I could not go on." There was widespread confidence that in any given line of work she knew the elements

that bring success, where to hold fast to essentials and where to yield to local or personal preferences. Like the born leader that she was she could inspire courage and confidence even where she knew that the risks were great.

Her largeness of view did not forbid that grasp of detail which is essential to success. Scrawled at the top of a page containing meager notes for a talk, stand the following words, evidently to be passed on to some friend who was to assist in the debut of a new speaker: "Stand in the door, can she be heard? Does she look trim and attractive—the first five minutes does it."

An examination of the correspondence that passed between her and the secretary of our Association for weeks previous to an annual meeting, showed this same grasp of detail, a positive genius in foreseeing every difficulty and emergency; hotels, assembly rooms, social engagements, excursions, assignment of duties to the most competent helpers, all received attention as well as the careful working out of the program.

Her characteristic foresight not only insured the success of future plans, it gave zest to her present work, making of tendencies a fascinating study; thus, what others counted failure was but an incident; in the main body of the experiment the next move was unfolding. She saw twenty-five years ago the important part that prevention of disease and sanitary science in general was yet to play, hopes that only in the last five years have met fulfillment. She saw that in a thousand ways public opinion could be educated; to seek out every available means to that end and to enlist and inspire helpers became one of her chief interests. This is shown by her early activity in the Association of Collegiate Alumnae as told on page 334 and the American Public Health Association to whose meetings she contributed valuable papers at almost every meeting; and in the Health Education League which she helped to found in 1904 and five of whose booklets she wrote.

Mrs. Richards' style of writing has a peculiarly tonic effect on the reader. A passion for ethical truth breathes through it, an ardor that is perhaps all the more contagious because it is evoked for purposes that are generally called practical. One feels that the basis is sound, not visionary, and that a discriminating mind places proper value on the objects of her desire. All these qualities are seen to the full in her last contribution to the *JOURNAL*, the Social Significance of the Home Economics Movement, and published in the issue of April, 1911. The style is condensed and suggestive rather than flowing. It has

a certain stimulating quality, you feel that she treats the subject for no other reason than that to her mind it is of the greatest importance that it should be treated. As she was wont to say about the series of little books on the Cost of Shelter, Food, Cleanness, etc., she had waited in vain for someone else to write them and they "had to be done."

She was especially successful in separating the principle from a mass of irrelevant detail. Her illustrations were sketched and suggestive rather than fully worked out. There was nothing to get out of date, the essays can inspire still another generation living in different surroundings.

The effect produced by her lectures was increased by her personality—it was not to be explained or defined—even those not interested in the subject felt it. As one woman said, "I've never thought of those things, and a week after the lecture I couldn't remember what she's said, but the effect remained. It stirred me up to be more efficient." I have never known a better illustration than she furnished of the fact that what a person *is* inevitably adds to the power of the spoken word.

Such was the woman to whom was due more than to any other person the present standards and the ideals for the future of this new science of home making.

## ORGANIZATIONS FOR THE PROMOTION OF HOME ECONOMICS.

Scattered efforts must sooner or later be gathered into an organization. Not till then is united work possible and a movement begins to make real progress, especially in the education of public opinion.

### NATIONAL HOUSEHOLD ECONOMICS ASSOCIATION.

The organization that led the way was the National Household Economics Association which held its first meeting in Chicago, October 24, 1892, the year before the Columbian Exposition, when so many projects were launched. Mrs. John Wilkinson of Chicago was the first president and Mrs. Ellen M. Henrotin honorary president. It had for its aim:

"(1) To awaken the public mind to the importance of establishing bureaus of information where there can be an exchange of wants and needs between employer and employed, in every department of home and social life.

"(2) To promote among members of the Association, a more scientific knowledge of the economic value of various foods and fuels, a more intelligent understanding of correct plumbing and drainage in our homes, as well as need for pure water and good light in a sanitarily built house.

"(3) To secure skilled labor in every department of our homes and to organize schools of household science and service."

At this first meeting papers were presented by Mrs. Helen Starrett on Possibilities of Reform through Organization and Coöperation among Housekeepers, by Mrs. Mary Hinman Abel on the Elevation of Domestic Labor to the Dignity of Trades and Professions, by Mrs. Melusina Fay Pierce on Coöperative Housekeeping, by Mrs. Kate Gannett Wells on Economic Organization, by Mrs. Herbert and Mrs. Remick on the Greater Simplicity in Living, and by Dr. Lieba Bedell on How to Ease the Burdens of Domestic Life. It is remembered by one who was present that whatever the title of the paper the speaker always came around to the servant question, but that the opinion was



general that the housewives were themselves to blame for the situation and by united action must find the remedy. It does not seem to have dawned upon these pioneers that a generation would pass without the remedy being found for these practical difficulties and that the educational possibilities of Home Economics would by that time have taken the center of the stage. Mrs. Linda Hull Larned, the last president, described this organization in the April, 1909, number of the *JOURNAL*. It held ten annual meetings and was then merged in the Home Economics work of the General Federation of Women's Clubs which it had done much to foster.

Two great organizations followed: The Lake Placid Conference, with its record of ten useful years, and the American Home Economics Association, now in its third year.

These associations, together with Mrs. Richards' intimate relation to them, are described elsewhere.

### MRS. ELLEN H. RICHARDS: HER RELATION TO THE LAKE PLACID CONFERENCE ON HOME ECONOMICS.

The small gathering of earnest pioneers (seven from outside with four Lake Placid Club members) who met in an Adirondack boathouse in September, 1899, were fortunate in having as chairman a born leader, a woman who united just those qualities most necessary to inspire enthusiasm and confidence, to discover special gifts in others, and to direct them into channels where they would be most effective.

During a social visit to the club the previous summer, Mrs. Richards was asked to speak informally to a few members on the ever present domestic problem and out of this grew the suggestion for a serious conference of trained workers, whose deliberations might have increased influence through united action. Of this small group, four have already passed over to the majority, Miss Emily Huntington, Maria Parloa, Maria Daniell and Mrs. Richards. The others who took part in the first gathering were Miss Anna Barrows, Mrs. W. V. Kellen, Miss Louisa A. Nicholass, Mrs. Alice P. Norton, Mrs. W. G. Shailer, and Mr. and Mrs. Melvil Dewey.

There had been organized effort for improvement of the home, dating from the Woman's Congress at the Columbian Exposition in 1893, when a national association was formed with branches and state chairmen, but possible solutions of the many difficulties the problems presented were still vague. Prof. W. O. Atwater (a guest

at the Club in 1899) was most helpful in encouraging and advising such a meeting and said: "The science of household economics is now in what chemists call a state of supersaturated solution which needs to crystallize out. Sometimes the point of a needle will start such crystallization." To Mrs. Richards' personal touch is largely due the wonderful progress made since that day.

With her recognition of the need came the clear vision of the remedy. With changing industrial and economic conditions, the home, the unit of society, was failing to meet the needs of better citizenship. Disintegration of the family was seen on every side. There was frightful waste of human efficiency because of ignorance of right living and overwork under wrong conditions. To reach the lives of the people, she recognized that the whole general scheme of education, from grade school through college life, must incorporate courses of study and methods of presenting subjects within the range of daily life and personal application, affecting ideals of conduct to be carried into whatever occupation or business might follow later. Such courses must be correlated and carried through education from the earliest years, developing knowledge of the true relation of things to the welfare of the individual and giving to the people a sense of control over their environment.

From the beginning the purpose of the Lake Placid Conference was educational, dealing with the economic and sociologic study of the home and with the problems of right living. Its keynote was "efficiency through health."

In her admirable paper *Ten Years of the Lake Placid Conference on Home Economics; Its History and Aims*,<sup>1</sup> Mrs. Richards summarizes concisely the essential subjects discussed in the programs of these early years: "Training of teachers of domestic science; courses of study for grade schools as well as colleges and universities; state, agricultural, evening, and vacation schools; extension teaching; rural school work; Home Economics in women's clubs with syllabuses to aid such study; manual training in education for citizenship." All these lead toward higher education and better living, in short to the new science of Euthenics, as an essential preliminary to the study of the better race, a study to which Mr. Francis Galton has given the name Eugenics. From the very first special emphasis was laid on the educational possibilities of this work.

<sup>1</sup>Proceedings Lake Placid Conference, 1908, pp. 19-25.

A classification of the material included in the general subject Home Economics as a working basis, together with correct nomenclature and annotated bibliographies were recognized among the first needs. Domestic science at farmers' institutes, simplified methods of housekeeping, standards of living in the conduct of the home and in relation to sanitary science, household industrial problems, labor saving appliances, cost of living, standards of wages, have all been discussed.

Programs have included the food problem in its many phases from fads and fancies to protein metabolism and mineral matter required by the human body; nutrition, sanitation, hygiene, progress in work for public health represented by the work of the Health Education League and the Committee of One Hundred on national health, leading to efficiency as the keynote of the twentieth century.

Economics in trade and professional schools, Home Economics in training schools for nurses, the hospital dietitian and the status of institution managers, reports of experiments in dietetics under many auspices, coöperation with the work of the U. S. Department of Agriculture, particularly with the nutrition investigations of the Office of Experiment Stations, reports from the American School of Home Economics, even psychic factors affecting Home Economics and cost of living have been considered.

Besides important reports of the teaching section and standing committees, each meeting aimed to concentrate the best thoughts of leading workers on one special subject in order that the discussions each year might count as distinct progress in some limited part of the field. Mrs. Richards' strong personality attracted speakers eminent in educational and scientific work who gave their best freely at her request.

Two conferences were held by special invitation outside of Lake Placid, one at Boston in 1903 and one at Chautauqua in 1908. In Boston a joint session was held with the Manual Training Section of the National Education Association. Efforts were made annually to have the subject brought before this body of educators but "it needed the general awakening in the lines of rural, agricultural, and industrial education to bring to a focus all the trend in modern life which makes the teaching of Home Economics in its various phases essential to social progress." In 1908, just before the Chautauqua Conference, Mrs. Richards was asked to present a paper before the N. E. A. Council and her masterly treatment of the subject won for



Home Economics its true place in the teaching world as the fourth R—Right Living—to be incorporated in the education of the people. This was followed by her election for a 6-year term to the N. E. A. Council, the highest educational authority in the country.

So far no constitution, by-laws, or red tape of any kind had hampered free initiative in the Lake Placid Conference. The movement was held and guided by Mrs. Richards' enthusiasm and power to inspire others. To a marked degree she had the gift of prophetic vision, the clear ideal which precedes intelligent action. The time now seemed ripe for a national association and steps were taken at Chautauqua for such an organization.

In the ten years of its existence the mission of the Lake Placid Conference was fulfilled. Under Mrs. Richards' wise leadership it had pointed out the way—which the many were now ready to follow. For her no labor had been too arduous, no sacrifice of time or pleasure too great when demanded by the interests of this work.

As a presiding officer, she combined tact and force with the rare power of obtaining results, sifting chaff from wheat and crystallizing the essential from thought and discussion. After a session, committee meetings would sometimes be going on in all four corners of the room, and before they dispersed she would have the best each had to offer.

When the history of this great Home Economics movement is written, the name which will stand easily first in recognizing the need, organizing the work, and shaping the policies, will be that of Ellen H. Richards.

ANNIE DEWEY,  
MELVIL DEWEY.

*The Cedars, April, 1911.*

THE LAKE PLACID CONFERENCE TO ITS CHAIRMAN,  
MRS. ELLEN H. RICHARDS, GREETING:<sup>1</sup>

Every movement for social betterment is made up at its beginning of apparently diversified and unrelated forces. Their common ground of agreement, their possible rallying point for combined effort, may be hidden from the ordinary observer, but stand fully revealed to the born leader. To such a one, possessed of imagination and enthusiasm, it is granted to see how this rich variety of experience and

<sup>1</sup> Presented at the Lake Placid Conference, 1905.



suggestion may be used in building up a unity which is yet various, and whose different parts when nourished and grown strong may establish their separate activities. There comes a time in the history of every social and educational movement, when the need for thus unifying the work of individuals is so great that without it further progress is difficult, if not impossible.

Such an organization, Mrs. Richards, was effected by you in the Lake Placid Conference, which held its first meeting in 1899. It was instantly recognized as offering inspiration and practical help to workers in many different fields, to all those, in fact, who were laboring directly or indirectly for the betterment of the home and for good citizenship. It appealed to the student of practical hygiene; to the teacher of sewing and cooking in the public schools; to the kindergarten and manual training teacher seeking to establish the relation to brain development of the training of hand and eye; to the educator engaged in outlining the purposes and methods for training the adult as housekeeper, as matron of public institutions, as teacher or nurse; to the club worker desirous of finding out the best ways of serving her fellow-citizen; to the thoughtful woman, interested primarily in the well-being of one home, but seeing that many forces must work together for that end. All of these students and workers have received help from the Lake Placid Conference in fuller measure than could have been foreseen at its inception. By able committees whose work has extended over several years, it has built up a consistent course of study for elementary, high, collegiate and technical schools; by the help of another committee, it has obtained through the catalogue system of the American Library Association the proper place for books on House Economics, thus smoothing the path of students in this and kindred lines; it has simplified the nomenclature and defined the use of terms formerly employed with different meanings in different schools and localities; it has furnished well-formulated syllabuses for school and club study on Food, Clothing, Shelter, and the Expenditure of the Family Income; it has preserved, in permanent form in the annual report, discussions by specialists on a large range of topics; it has thrown light on all of these subjects through the coöperation of educators, not only of our own land, but of England, Canada, and Australia; it helped to increase the number of free government bulletins at the disposal of students, by petitioning Congress for additional grants to the Department of Agriculture to be used in nutrition investigations; it has suggested and made possible the establish-

ment of summer schools, evening classes, and courses of lectures in many localities; it has helped in building up the correspondence courses in Home Economics; it has brought to the knowledge of members the best books on special topics and has suggested the need and the scope of new ones, such as that valuable series on the Cost of Living, The Cost of Food, and The Cost of Shelter, all of which have been written since the Conference was organized.

One of the chief functions of the Lake Placid Conference has been to put in touch with each other persons of like interests and pursuits from widely separated parts of the country. This has often resulted in bringing to a given work the very worker who could successfully carry it forward and has made it possible to bring together students of special subjects for the giving of valuable courses of lectures. At these conferences the brave and enterprising West has come to learn of the more experienced East, and the East has in turn learned of a vast and prosperous region where home life and farm life still have the old, close relation which has furnished ideal conditions for character building.

The dominant note in the deliberations of this Conference, that which has given it its distinctive character, is the ever-present sense of the end for which all this educational machinery exists, "the promotion of healthful, moral, and progressive home and family life, the indispensable basis of national prosperity." The Conference has repeatedly pointed out that "no person has a better opportunity to separate convention from good living than the teacher of housekeeping methods." That there may be "standards of living," and that light may be thrown on them by acknowledged principles of economic and social science, and that these standards should be treated from the point of view of their relation to physical and moral health, are doctrines which have taken form in this Conference with clearness and force. It has been recognized that the home cannot adjust itself to the rapidly changing conditions of modern times without help from trained people working through the only practical medium, the school, hence the importance of placing courses in Home Economics on a sound educational and scientific basis.

Best of all, this Conference has been characterized by a sunny atmosphere of courage, helpfulness, and enthusiasm. It has been especially full of inspiration to the young teacher. "For two years," said one, "the Conference gave me all the help I had." "What I learned that others had done, nerved me to the task of starting practical courses in the rural schools of my state," said another.

It is impossible to give due credit to all the different factors that have united in producing this whole, making of it an educational influence which it is believed will be a power for good in the land. The name and place of meeting suggest the debt of the Conference to Mr. and Mrs. Melvil Dewey, who, not only by their generous hospitality, but by their wise counsel and encouragement, have made the Conference possible. But there has been no doubt in the mind of even the most casual observer of the Conference that you, its Chairman, were the inspiring genius and leader of it all. It is you who have drawn around you these workers from far and near and given them quickened thought and a vision of how "all things work together;" it is you who have ever seen the main issue clear through confusing details and have pointed out not only ideals but the open way to their realization. But we who love and honor you can give no better proof of our feeling than to obey what we know would be your wish, and leave unwritten the volume of your good deeds.

"Our chief want in life is some one who shall make us do what we can. There is a sublime attraction in him to whatever virtue is in us."—*Emerson*.

SUBJECTS OF PAPERS PRESENTED AT THE MEETINGS OF THE LAKE  
PLACID CONFERENCE, 1899-1905, AND REPORTED IN THE  
PUBLISHED PROCEEDINGS.

Courses of study in Home Economics in grade schools, secondary schools, colleges and universities, professional schools and agricultural colleges; handwork for high school girls; trade schools in relation to public education; the Manhattan trade school; vacation and evening schools; mission work and kitchen-garden classes; household arts in country schools; what agricultural colleges may do for the farmer's daughter; reading courses for farmers' wives; training of teachers in Home Economics; physiological chemistry in connection with Home Economics; botany in connection with Home Economics; teaching of Home Economics in the rural schools of Maryland; Home Economics in Canada; Teaching of Home Economics in orphan asylums, in social settlements, in country communities; English methods in practical hygiene; what New York State is doing to promote education; classification of Home Economics according to library methods; what the government is doing for domestic science teachers; the American School of Household Economics; labor problems in the



household; the coöperative laundry; the Household Aid Company; simplified methods of housekeeping; attitude of housekeepers toward non-resident labor; present century housekeeping as a profession; standards of wages, hours, etc., in household service; physical development by means of housework; business opportunities for women in household crafts outside of the home; women as sanitary inspectors; journalism in relation to Home Economics; work of women's clubs in Home Economics; syllabus for study clubs on food, on shelter, on standards of living; standards of housework as modified by large numbers; embellishment and utilization of small home grounds; the architect and the housewife; the model cottage at Boulder; proteid metabolism in relation to dietary standards; diet and health; dietary work with students; food values in family menus; food adulteration; law of domestic institutions; the significance of the family in the development of the individual and of society; readjustment of values, social and economic; what shall the women do with time set free by modern methods? hospitality in the modern home; controlling ideals in the family life of the future; refined life on small incomes; effect of some social changes on the family.

## MRS. RICHARDS AND THE ORGANIZATION OF THE AMERICAN HOME ECONOMICS ASSOCIATION.

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The Lake Placid Conferences had been personal, informal, intensive, preliminary; they were most effective for laying firm foundations and initiating wise plans. Mrs. Richards had probably from the first looked forward to another type of organization but she had the patience necessary for great things. Certainly, at the ninth conference, in 1907, in reply to a question why a national association should not be formed, she replied, in substance: "We have started a separate teachers' section; let us see what it will accomplish; the association will come in time when we are ready for it." The first "teachers' section" had met in the preceding December (1906); its report and that of the section the next year joined with other evidence to prove the times ready for the country-wide organization.

Early in the sessions of the Tenth Lake Placid Conference which met at Chautauqua in July, 1908, Mrs. Richards, with characteristic



method asked "that written suggestions be handed in at a later session as to (1) the most important work for the conference for the next ten years, and (2) the desirability of reorganizing into a national body." She had sounded some individuals in advance by correspondence and she had herself concluded, I believe, that the time for reorganization had come, but she would only proceed if the body of members desired it, and if they had some conception of what such an organization might accomplish in "the next ten years." Here one sees the wisdom of the real leader who will go forward just as rapidly as others can follow but no faster. "There are 2000 to 3000 teachers of Home Economics in the United States and Canada," said Mrs. Richards later in the conference, "and we may gain by forming a broad organization and differentiating later if best."

A preliminary committee on national organization brought together suggestions from various quarters and reported to a later session of the conference its conclusion that the time had come for a national organization which would take into consideration the Lake Placid Conference and any similar bodies; that Home Economics groups should be organized in different states; that the proposed organization should publish a journal; that teachers, especially, and other groups also, as the women's clubs, should be interested in the organization; and that a name national in character, as American Home Economics Association or National Home Economics Association should be adopted. It was recommended that a committee on organization be appointed to report at the meeting of the Teachers' Section of the Lake Placid Conference at Washington, in December, 1909.

The conference at Chautauqua responded promptly to this report, voting by resolutions which succeed one another in the minutes like quick pulses of decision; first, that in its opinion the time had come for a national organization; second, that its name should be the American Home Economics Association; and finally, that the conference should begin at once the publication of a small quarterly periodical. "It was estimated that 1000 teachers would take the journal the first year. There was considerable discussion as to who should furnish material for it, resulting in Mrs. Richards offering to be responsible for it." How that phrase from the minutes epitomizes the history of the Lake Placid Conferences, the organization of the American Home Economics Association, indeed the whole Home Economics movement from its beginnings on into future developments we are just beginning to appreciate—"Mrs. Richards responsible for it."

The preliminary committee at Chautauqua was continued as the working, responsible committee on organization. Dr. C. F. Langworthy of the U. S. Department of Agriculture in Washington was chairman; some members were located in New York, others at Lake Placid, in Chicago and the West; and Mrs. Richards in Boston acted as adviser and counsel in the correspondence that passed to and fro in the next months as a tentative constitution and plan of organization was drawn up. No one person is responsible for everything in times of reorganization, but it is fair to say that no one person contributed so much as she to the new plans. Through this fall of 1908, Mrs. Richards was especially busy, too, with bringing out the first two numbers of the preliminary quarterly publication, *The Lake Placid Conference on Home Economics—Quarterly Bulletin*, of which the first issue came out in September and the second and final one, as it proved, in November. This forerunner of the JOURNAL OF HOME ECONOMICS in its first modest eight pages, states succinctly and by a familiar convincing pen, the basis on which the new association is to be formed: Its purpose is to give intercommunication and coöperation among all those engaged in trying to solve home and home education problems; the possible agencies for improvement of home conditions are rapidly multiplying and need to be brought into helpful communication; the increased cost of living and the changed position of women are home problems which challenge the sociologist and the ethical teacher; the interdependence of private cleanliness and public sanitation interest the civic expert, and public institutions are demanding trained house managers; the home is the strategic point in the tuberculosis and other health campaigns. On such a basis the new organization was projected, and samples of news-notes, queries, bibliographies and advertisements, fill the pages of the first *Bulletin*, as an indication of what the projected journal might be later. Prominent, too, and characteristic of this wise organizer's method was the request for criticism and advice. Mrs. Richards was reporter, editor, business manager, all in one, for the first and second *Bulletins*, and now afterward, one wonders about that and so many other things which she accomplished: "How did she do it?"

The November *Bulletin* had twice as many pages and opened with the program of the meeting of organization to be held in Washington. It included some comments on the program from Mrs. Richards, bibliographical notes, news items, and four pages devoted to "data on equipment for teaching domestic science." It includes, too, a

characteristic paragraph from Mrs. Richards on methods of teaching which is too good to be lost: "In reply to many requests for suggestions as to methods of teaching, the editor reminds teachers that the hill of learning is not to be cut down so that the road lies sunken between high banks of sand or hard rock, neither is it to be tunneled for the sake of quickly reaching the presumably flowery meadow beyond. It is the teacher's duty to provide wayside shrines, with cool water and fruits and flowers, near enough together to entice the eager learner to teach them—with time enough to rest and take pleasure in the ever enlarging horizon. When the first crest is reached there should be no sense of fatigue but only a desire for the outlook from the next higher."

Meantime the committee on organization had sent broadcast the invitations to join the proposed association and the numerous and cordial replies indicated that the response would be country-wide. The convention convened, officially, as the Teaching Section of the Lake Placid Conference with Mrs. Richards as chairman, and after receiving the report of the committee on organization adjourned *sine die* to reassemble immediately as an organizing convention of the new association. The story of the reorganization was told in the first number of the JOURNAL OF HOME ECONOMICS and need not be repeated here. One or two incidents only may be given to make clear Mrs. Richards' relation to it. When the delegates met to effect an organization and no "slate" had been arranged, in the instant's awkward pause after the call for nominations for president, when everyone's thought was turning to one person, a quick-witted delegate gave Mrs. Richards' name from the floor and the election was made by heartiest acclamation. So her guiding hand that had but an instant before relinquished the Lake Placid organization was placed at once on the helm of the new association. The spontaneous tribute, however, was a thing never to be forgotten.

Delegates to the Washington convention recall with especial pleasure the first informal dinner of the new association at the Hotel Gordon, January 1, 1909. Mrs. Richards had been compelled to leave the convention for a few hours for an engagement in Baltimore. A telegram came to the dinner-party: "Happy New Year to the new society! May it celebrate its fiftieth birthday by the establishment of the new species of housewife! (Signed) Ellen H. Richards and Mary Hinman Abel." What optimism tempered with wisdom and

the long vision! Some one shall yet collect for us from her writings, a new "Richards' philosophy," fit to rank with Ben Franklin's.

Another incident happened next morning when Mrs. Richards was presiding at the first public session of the new Association. Public men and university professors brought greetings to the new society and its president. In the unpublished stenographic notes I find these words, and I recall perfectly the white-haired professor of chemistry who spoke them: "I have known Mrs. Richards and admired her work and particularly her application of chemistry to the subject of Home Economics. I have been longer in chemistry—but Mrs. Richards has passed me."

One incident more. The convention had adjourned, having adopted a constitution which provided for the publication of a journal, but had not provided "how" or "who." As the delegates were leaving, Mrs. Richards asked the members of the executive committee who could do so to meet at her parlors in the Gordon that evening. Not a quorum was present, but there until a late hour the plans for the JOURNAL as we know it were whipped into shape, and the conclusions were sent off to absent members for approval. Duties were assigned to various ones in perfecting the organization and initiating its publication; the new country-wide organization for better living with its JOURNAL was launched; and the little group broke up, its members and the large membership feeling sure of the future, for "Mrs. Richards was responsible for it."



## PRACTICAL EXPERIMENTS FOR THE PROMOTION OF HOME ECONOMICS.

### THE NEW ENGLAND KITCHEN.

MARY H. ABEL.

The application of scientific principles to the cookery of food materials on a large scale, with the help of chemical analyses and a comparative study of utensils and methods, was undertaken in Boston in January, 1890, and the dishes prepared according to the formulæ finally adopted were offered for sale at the New England Kitchen, then situated at 142 Pleasant Street.

This important experiment was the first of its kind in this country, and it owed its inception to the desire of Mrs. Quincy A. Shaw that a thorough study should be made of the food and nutrition of the working man and its possible relation to the use of intoxicating liquors. She was ready to supply adequate funds for conducting such an enquiry according to the methods recommended by Mrs. Richards, who was her adviser in the matter. She fully understood the limitations of "the experiment" in the scientific sense and made no stipulation as to what results must be obtained or how the money should be used, an attitude of mind even more rare twenty years ago than it is now.

The work was carried on under the direction of Mrs. Richards and Mrs. Abel, who began extensive experiments in the use of cooking utensils and in methods of cooking the cereals and the lower-priced meats. Dr. Edward Atkinson, whose Aladdin Oven was at that time much discussed as affording a method of conserving heat and conducting cooking at temperatures under the boiling point, was a constant friend and adviser of the enterprise. Through him a grant of \$300 was obtained for the Kitchen from the trustees of the Elizabeth Thompson Science Fund for The Right Application of Heat to the Conversion of Food Material. This fund was used in the purchase of scientific instruments and to pay for frequent chemical analyses of the foods, not only to establish a desired standard but afterward to hold the manufactured product to that standard. The reports made by Mrs. Richards and Mrs. Abel to the trustees of the Elizabeth

Thompson Science Fund were presented by Dr. Atkinson at the meeting of the Association for the Advancement of Science in August, 1890, and may be found in the published proceedings (Vol. 39). From this source it was quoted by Professor Atwater in his bulletin entitled *Methods and Results of Investigations on the Chemistry and Economy of Food*.<sup>1</sup> This report precedes by many years other work of its kind. At that time the food of man had been far less studied than that of farm animals. Through Dr. Atkinson contributions were also made to this experiment by Mr. Andrew Carnegie and Mr. Henry Phipps.

It had been said by Dr. Drown, professor of chemistry at the Institute of Technology, that if one food, beef broth, could be made of the same flavor and strength day by day, as unvarying in its constituents as the medicine compounded to meet a physician's prescription, that result alone would justify the proposed expenditure of time and money. By the help of repeated chemical analyses the methods of preparing this dish were brought to such perfection that the result was a food that differed in only the slightest degree from day to day, analysing about the food value of milk without the fat. It was welcomed by the physicians of Boston, and the first success of the Kitchen was with the well-to-do rather than with the poor.

The following dishes, after similar study were finally placed on sale by weight or measure: beef broth, vegetable soup, pea soup, corn mush, boiled hominy, oatmeal mush, cracked wheat, pressed beef, beef stew, fish chowder, tomato soup, Indian pudding, rice pudding, and oatmeal scones. These foods were intended to supplement the home cooking. To start a restaurant was not a part of the original plan.

At the end of two years the Kitchen reached the point of self-support though with a narrow margin. In the spring of 1902 the Kitchen was asked to furnish for the public schools the model lunches that should be satisfactory as to both taste and nutritive value. The success attending this enterprise was felt to be entirely due to the standards upheld by the Kitchen and the experience it had gained in cooking large quantities of simple foods by the best methods.

In January, 1892, classes were formed under the charge of Miss Maria Daniell for the study of economic and sanitary cooking, the lessons being illustrated by dishes prepared in the Kitchen. During

<sup>1</sup>U. S. Department of Agriculture, Office Experiment Stations, Bulletin 21.

the winter some forty students from a medical school came for practice in cooking for the sick.

Branch kitchens started, one in the West End of Boston, another at the North End, another at Olneyville, a suburb of Providence, R. I., another at 341 Hudson Street, New York, and still another at Hull House, Chicago, did not flourish, and were given up, not however until each had taught its lesson and added to our knowledge of living conditions in crowded centers, especially as to the kinds of food bought and the proportion of the income that is spent for food. The failure to meet self-support in these instances was probably due to the fact that the working people surrounding such places were of many different nationalities, each tenacious in its preference for its own dishes. Nutritious food cooked in a cleanly manner did not appeal to them as one of the most important of the many things they have to compass in this new land or worth going a block out of their way to purchase. This was twenty years ago and the problem is yet unsolved, for the American citizen and housewife does not yet make use of the results of scientific knowledge.

The Kitchen became a rallying point for those who had been working at various phases of the same large question. At the beginning of the experiment there seemed to be but few sympathisers and helpers, but the number grew with the months and formed a nucleus for what was afterwards organized into the Lake Placid Conference. Miss Maria Parloa, Mrs. Lincoln, and others of recognized culinary skill gave substantial assistance. Edward Everett Hale's noble shaggy figure was a familiar visitor. He said, "I've been waiting fifteen years for something of this kind."

In 1894 the main Kitchen was moved to Tremont Street and in 1903 to Charles Street. Shortly after it passed into the hands of the Womens' Educational and Industrial Union whose managers still control it.

Miss Sarah E. Wentworth, who undertook the direction of the Kitchen after the first seven months, who developed the school luncheon work, and who has presided over the various changes and adjustments including the final transfer, says that after Mrs. Richards' personal touch on the details of the business was removed she still felt that back of it all stood her personality, her wisdom, and her wonderful power to inspire and give courage. "Although I might not see her for months, she was *there* and the simple knowledge of that tided over endless difficulties too petty to carry to her. The larger questions



she was never too busy to help us solve. When the New England Kitchen property was transferred to the Women's Educational and Industrial Union, a clause was inserted giving to Mrs. Richards the right to interfere if at any time she felt convinced that the standards were being lowered. Both sides felt it an honor to have her name in any way connected with the continuation of the work."

At the World's Fair at Chicago in 1893 the methods of the New England Kitchen were shown in the Rumford Kitchen which was in the department of education of the exhibit made by the State of Massachusetts.

The present status of the New England Kitchen is thus described by Miss Mary H. Moran, who has been the director for the last five years:

"With regard to the present status of the New England Kitchen, considered in relation to the original purpose of the enterprise, I wish to say that, speaking unofficially, it seems to me that the development since the Kitchen came into the hands of the Union has been along the same lines as that during the five or six years immediately preceding. The function of the Kitchen at present is that of a lunch-room and food salesroom of high grade, considered from the viewpoint of cleanliness, quality of food, and attractiveness of surroundings and service. This means that we are meeting the need of a group of persons very different from that which it was originally the aim of the Kitchen to reach. Our clientele is drawn almost wholly from what is ordinarily termed the middle class—men and women of good standards and tastes, living upon moderate incomes. In connection with this work, the Union really does appreciate that the enterprise offers distinct opportunity for social service, that one of the greatest needs today is that of proper living arrangements, housing as well as feeding, for the great army of workers in our large industrial centers at a price which comes within the reach of the man and woman of moderate salaries. You will see by this that the function of the New England Kitchen, as the Union interprets it, is not very different from the original purpose, except that the lines have shifted from the very poor group to one that, while a little better provided for, in some respects is put to it quite as much to make ends meet.

"The high school lunch work is still going on and has developed so that now we are sending luncheons to sixteen different schools. The lunch work is under the direction of an advisory committee on school luncheons, to which the school committee delegates full responsibility.



This advisory committee is made up of three representatives of the Union and three representatives elected by the Head-Masters' Association, an organization of high school masters. All the arrangements with regard to the luncheons are in the hands of this committee and all data as to receipts, costs, etc., are accessible to them, as the Union is under agreement to serve these luncheons at cost. The number of students reached through these luncheons is between 4500 and 5000 daily. With the exception of the ice cream, crackers, and chocolate, all of the food served is prepared at the New England Kitchen. The total receipts from luncheons for the school year just closed was in the neighborhood of \$50,000."

### THE SCHOOL OF HOUSEKEEPING.

HENRIETTA I. GOODRICH.

This attempt to solve the question of household service was founded in Boston in October, 1897, by the Woman's Educational and Industrial Union. Its aims were three: (1) To train employees to do housework; (2) to train employers to keep house; (3) and to serve as an experiment station in Home Economics.

During the first two years the emphasis of the school was laid on training maids, and the lectures for employers were a series of rather loosely related talks by experts, on a variety of subjects, and attended by older women—a group of conservative, established housekeepers.

The demand for training on the part of employees was slight and after four years, classes for employees were given up. The demand for training on the part of prospective employers of household labor, young women just out of college, boarding or high school, increased steadily during the five years of the school's existence.

Dating from about the end of the second year, when we began to plan classes, that is a consecutive course, for college or boarding school girls whose interest was as future home-makers or institutional managers, Mrs. Richards' interest was thoroughly enlisted and she was the chief adviser in the development of the Home-makers and Professional Courses, suggesting names of lecturers, and using her own wide influence to secure the interest of experts and of other influential persons in the community. In addition, she herself gave, in each of the last three years of the school, a course of lectures on chemistry of foods and helped to plan with the other instructors—as Miss Usher and Miss Elliott—the outline of their courses, material for demonstration, etc.

In coöperation with the Massachusetts Bureau of Statistics of Labor, students of the school published two reports: Social Statistics of Working Women, and The Cost of Home-made and Prepared Food.

On July 1, 1902, the School of Housekeeping was transferred by the Union to the Trustees of Simmons College, and was incorporated with modifications in the Home Economics Department of the college.

#### THE HOUSEHOLD AID CO.

Between the years 1903 and 1905 the Woman's Education Association of Boston conducted a very interesting experiment through its committee on domestic economy in order "to study at first hand the problems of household labor under modern conditions by furnishing household labor by the hour."

The report of this experiment was written by Mrs. Richards and is a remarkable document, one that should be reprinted and given a permanent place in our scanty literature of original experiments. As Miss Ellen A. Huntington, at one time the director, writes, "That is to me a wonderful report, she organized disorganized facts," and Professor Lucy Salmon of Vassar College wrote Mrs. Richards, "This report ought to have wide circulation. Let us work for a \$10,000,000 endowment for the investigation of all matters pertaining to the home."

We make a few quotations:

#### THE PLAN.

A definite period of two years was determined upon as the first stage in the experiment.

Certain disabilities in service had been claimed as fundamental causes of the disfavor in which it was held, such as—on the part of the worker:

(1) Required residence in the house, and yet not of it. Life was irksome. The room, the food, the associates and general surroundings were frequently not satisfactory to a self-respecting girl. Therefore a house was secured, furnished and run for the 20 Aids as their *home*, not a mere lodging place.

(2) Hours of work were long and indefinite. Therefore the Aids went out for definite periods only.

(3) Lack of congenial companionship and recreation. Therefore particular pains were taken to make the home life attractive.

(4) Injustice in the demands for service. Therefore the Company served as an intermediary.

On the part of the employer:

(1) Scarcity of material. Therefore the Company proposed to draw upon an entirely new source of supply not now on the market.

(2) Low grade of intelligence and skill available. Therefore an educational test was applied to the candidates and training was to be given for six weeks before any Aid was sent out to work.

(3) Unreliability. Therefore the Company assumed the responsibility and investigated causes of dissatisfaction.

(4) Danger of infection from outside help. Therefore the Company provided a home and took responsibility for sanitary conditions.

At the end of the original time limit of two years the experiment was closed. It had collected in that time valuable data on the subject of household service and had been able to formulate conclusions, based upon them, which had been the original aim of this company. In the two years \$5000 had been expended in addition to what had been received for the work of the Aids. As self support was not in sight the establishment of the Household Aids as a commercial enterprise was not attempted.

We quote below a few of the conclusions:

#### DISAPPOINTMENTS ON THE PART OF THE COMPANY.

(1) The attitude of the public was not only hypercritical, but in many cases distinctly hostile to the principle involved. This indicated that the scheme was ahead of its time.

(2) The educational side of the plan was not considered by those who freely support other schemes, but persons financially able to maintain the enterprise insisted that the house should at once become self-supporting. This is only in accordance with modern "business methods" which look to success at the expense of the worker. The Company had an eye to the final advancement of the individual worker; to this extent the Company was philanthropic as well as commercial.

(3) Intelligence did not make up for lack of early muscle-training. The teacher, seamstress, or typewriter who has never trained the muscles used in dusting or waiting at table, in cooking, or fine laundry work, cannot at once become skilled in the new trade. Because of this slowness of acquisition by the adult worker, six weeks of general training for such intelligent and willing persons did *not fit* them to compete with the girl who came from over the water at an early age and learned by the actual doing. Therefore the employers did not receive the skilled, all-round service they expected.

(4) The expected supply of workers was not found, therefore the waiting list could not be maintained, nor an uneven demand for service always met.

(5) The low standard of physical strength in the Aids. Thirty to forty hours a week was all that most were equal to without undue fatigue. It is true that the workers gained as the months went on, and less effort was required from the long unused or never-used muscles. There was also great reluctance on the part of the workers to undertake any or all kinds of work. This brought down the receipts of the Company.

(6) Employers would tolerate unskilled service of persons living in their own houses when they could not endure it in the service of Aids. Therefore this skill

must be acquired somehow, somewhere, before satisfactory employment is obtained. In no other department of labor is learning by doing so important as in housework. For this reason a house for adequate training needs to be equipped with all the appliances likely to be found in experience—and the finance of housekeeping is so little understood by employers that they were unwilling to pay what skilled labor to be had on call by the hour is really worth.

(7) The tendency to specialization in the service called for did not help the employer for whom the Company had the greatest sympathy—the one who needs help in any or all departments of her work to keep her standards within sight and yet who must count her pennies. She needs the all-round, skilled worker who can put a house in order or prepare and serve a meal.

(8) Housewives in general did not appreciate the advantage of security in freedom from risks of contagion, of security in the honesty and reliability of the employees, nor did they value their own time in overseeing unskilled labor. All these advantages did not outweigh the extra two or three cents an hour which the Company was obliged to charge.

(9) No promising outlook for the advancement of Aids could be shown, that is, increasing pay for increasing skill could not be guaranteed.



## MRS. RICHARDS' RELATION TO INSTITUTIONS.

Mrs. Richards' remarkable qualities as an adviser in the field of institution management are best shown in the testimony of a few of those whose problems she helped to solve. It has been found impossible to obtain even a list of the institutions whose courses of study she suggested or criticised, whose development she helped to strengthen and to guide along right lines, and the list of her lectures at such institutions proves to be very incomplete. We subjoin a few tributes to her helpfulness:

### MRS. RICHARDS AND TEACHERS COLLEGE, COLUMBIA UNIVERSITY.

Mrs. Richards was, from 1902 to 1909, with the exception of one or two years, a regular non-resident lecturer at Teachers College, and thus contributed to the development of the departments of domestic science and domestic art in the years immediately preceding the organization of the School of Household Arts. It was in 1902 that she went as a special lecturer to the Summer School of Chemistry and Biology organized at Wesleyan University by Professors Atwater and Conn, which proved to be the first Graduate School of Home Economics, and the same year she came to Teachers College to give advanced instruction in foods and dietaries. She gave some ten or a dozen lectures in the advanced course in foods, bringing to the students the results of her own scientific work as well as her broad knowledge of the whole field of Home Economics.

This service, or a similar one in other courses, she repeated nearly every year. She came not only as lecturer, but as the friend and wise counsellor of members of the instructing staff and also of the students, especially those advanced students, experienced workers, who come back from active service in various parts of the country for further study at the college.

Mrs. Richards' coming was always a gala time. In addition to her lectures, she usually gave an open address to all members of the departments of Home Economics, to which visitors were always welcome; while the students for their part would arrange a little reception and informal tea that all might meet her socially.

But her coming was more than a gala time; it was a time when all who met her became conscious of the broad meaning of the Home Economics movement. One appreciated the evangel of pure food, of sanitation and hygiene, of the art of right living. How she economized her time—a schedule to see this and that person, an hour to visit this lunch room or that institution; and yet how generously she gave—a suggestion of research to this or that one, a constant inquiry regarding schools, persons, places, progress. It was thus that she made of Home Economics workers everywhere a body whose members became conscious of their aim and later organized to accomplish it.

Some of Mrs. Richards' last lectures and addresses at Teachers College were on dietaries, the Colonial Household (with illustrations from her own experiences on a New England farm at the middle of the last century), and a lecture on *The Increased Cost of Living*, which straightway interested the press, an ally which she always welcomed.

Mrs. Richards last visited Teachers College in January 1911, and all who heard her speak on *Progress in Home Economics* will never forget her survey of the growth of the movement and her hopeful prophecy of new developments—among other points, the need now of practical preparation for those going into household management and the need of apprenticeship to supplement laboratory instruction.

For many years, Mrs. Richards came to Teachers College once or twice yearly as a friendly visitor; for six years, she served the College officially as a non-resident lecturer; whatever good the School of Household Arts of Teachers College may accomplish will go back in part to her generous contributions of wise counsel and inspiring vision no less than of sound learning.

B. R. ANDREWS.

#### MRS. RICHARDS AND PRATT INSTITUTE, BROOKLYN, N. Y.

It is with a sort of sad satisfaction that I set myself the task of writing a brief account of the connection that our friend Mrs. Richards had with Pratt Institute. I am grateful for this opportunity to give public acknowledgment to the friendly help she was constantly giving me.

When my father determined to make work on domestic problems a part of his efforts at Pratt Institute, he consulted Mrs. Richards freely, and she proved herself interested in his ideas and plans and

practical and helpful in her suggestions; but her unique service was rendered the Institute when his untimely death left me to face an undertaking that youth and inexperience made a heavy burden. In those early days of my apprenticeship, and, in fact, all along the years (for who ever lives long enough to outgrow his period of experimentation and apprenticeship), I went to her for help and advice whenever I needed to, and she never made me feel that I came too often or troubled her too much.

I never minded having Mrs. Richards know how ignorant I was. Hers was that large outlook in life that counted all men wise and ignorant in degree only, and you always felt that she was holding her own strong convictions "subject to revision." So she managed to make me feel that I was helping her, while she helped me, and that the interchange of experiences and opinions had brought us both to a saner point of view. Then, too, Mrs. Richards was a person whom I knew I could consult freely without taking her advice. Many a time I have felt that my personal, intimate knowledge of our local conditions made it wiser not to follow her suggestions, but I never saw her lose interest because of this decision. In fact, I think she watched our progress at such times with unusual attention, so that she might learn something from the working out of a plan that differed from the one she would have employed.

It is not too much to say that we never made an important change in our work for women that I did not talk over with Mrs. Richards and, while many changes were made contrary to her judgment, many of our plans found their inspiration in her wise suggestions. I hope that I made her understand what it meant to me to have a friend to whom I could always turn and whose sympathetic hearing of my case was a help to me in clearing my own thinking.

She was a frequent lecturer at the Institute, and we never meant to have a class graduated from our School of Household Science and Arts the members of which did not feel that they had come to know her. Then, too, all Pratt Institute graduates she considered her friends, who were entitled to all the rich privileges that friendship with her carried with it.

At great sacrifice of time and strength she came to us for our graduates' supper last June, and gave to that occasion an uplift for which we were most grateful. When we opened last fall our practice-house for our household science students—one of her pet schemes for us—she came again and set upon our plans the seal of her interest and

approval. We little thought then that her period of service among us was so soon to be ended.

I feel that Mrs. Richards' death means a loss to Pratt Institute that can never be made up, but I hope that our sense of this loss will serve to intensify our determination to be worthy of her friendship and will inspire us to renewed efforts to realize the ideals that she held up to us.

FREDERIC B. PRATT.

#### MRS. RICHARDS' LECTURES AT THE UNIVERSITY OF CALIFORNIA.

The following outline of a course of lectures given by Mrs. Richards at the University of California will indicate the matter and style of those addresses which were heard in so many institutions:

Mrs. Richards was with us, officially, in 1909 and the extract concerning her work as it appears in the catalog for the summer session, June 21 to July 31, is as follows:

##### HOUSEHOLD ECONOMICS.

*Ellen H. Richards, M.A., S.B., Instructor in Sanitary Chemistry, Massachusetts Institute of Technology, Boston, Massachusetts.*

1. Household Management in the 20th Century. Relation of Cost to Efficiency. (Beginning July 12.) Mrs. Richards.

How sanitary science has increased costs; estimates and plans for three grades of income; the cost of shelter, needs of the body, needs of the mind; the cost of food, actual and relative; factors influencing it, care and inspection, transportation, storage, etc.; cost of cleanliness, national and interstate regulation, inspection of factory processes, municipal cleanliness; house dirt, prevention cheaper

than removal; cost of human life through carelessness and ignorance. 1 unit.

2. Euthenics. (Beginning July 12.)

How far may we hope to improve the race in the course of, say, a century and in what direction is the first effort indicated: General living conditions may be reformed; clean streets, markets, factories, homes, better ventilation and more open air life; personal habits improved, breathing, standing, walking, eating, use of eyes, sleeping, self-control; prevention and control of communicable diseases through modern knowledge and community effort; the poor and the responsibility of the home-maker; the duty of the higher education to put knowledge into the hands of the people. 1 unit.



From Faculty of the Summer Session:

*Mrs. Ellen Henrietta Richards, M.A., Instructor in Sanitary Chemistry, Massachusetts Institute of Technology. A.B., Vassar College, 1870; M.A. 1873; B.S., Massachusetts Institute 1876-84; Instructor in Sanitary Chemistry, 1884; author of Chemistry of Cooking and Cleaning; Food Materials and Their Adulterations; Home Sanitation; The Cost of Living; The Cost of Food; The Cost of Shelter; The Cost of Cleanness; Air, Water, and Food; First Lessons in Minerals; First Lessons in Food and Diet; The Art of Right Living, etc.*

Her talks were exceedingly practical and full of life, her audiences large and enthusiastic, and it was with difficulty that she could meet the demands for special conferences asked for by so many of her hearers. Her visit made a strong impression on those interested in the work on the Coast and furthermore it greatly encouraged them.

M. E. JAFFA.

*University of California.*

#### THE UNIVERSITY OF CHICAGO.

The new University of Chicago was opened in October, 1892, and Mrs. Richards was deeply interested in it from the first. In 1893 occurred the World's Columbian Exposition at which the Rumford Kitchen, arranged by Mrs. Richards and Mrs. Abel, was a part of the exhibit of Massachusetts in connection with the Bureau of Hygiene and Sanitation. When the Women's Halls at the university were opened in October, 1893, it occurred to Mrs. Richards that the new university, already conspicuous for its freedom from academic traditions and for its readiness to follow new paths, might consider the housing and feeding of its women students as a matter worthy of scientific investigation and experiment.

Her anticipation was in large measure realized. The university bought a considerable part of the equipment of the Rumford Kitchen, including some forms of apparatus and some utensils found to be especially desirable. She remained for several weeks at the university, installing the equipment, and taking a large part without remuneration in the arduous task of organizing the household service and establishing standards of domestic life. Under her direction careful records were kept of all food supplies to serve as a basis for further study. The results of this investigation were prepared later by her and Dean Marion Talbot and published by the university under the title *Food as a Factor in Student Life*.

During the following years she visited the university whenever she was in Chicago and kept in close touch with the administration of the Women's Commons, making criticisms and suggestions which were invaluable. There was some disappointment on Mrs. Richards' part that greater use could not be made of the plant for strictly educational purposes, but she took satisfaction as time went by in the reports which reached her of the successful working of the methods she had inaugurated.

MARION TALBOT.

#### SIMMONS COLLEGE.

Simmons College is completing its tenth year. For several years before the college opened its doors its corporation had been actively engaged in studying the problem of vocational education for women. One of the first conclusions reached by the corporation was that whatever programs of study might be omitted from its curriculum, a place must be made for Home Economics. At that time all who were concerned in the interests of the college-to-be frequently conferred with Mrs. Richards, who held the key to the treasure house of experience in Home Economics. She was then much interested in outlining for the city of Boston a program for the School of Practical Arts for Girls, which has since become an established fact. I remember well many conferences with her, in which she outlined the progress of the work as she had seen it, pronounced prophecies which have long since become established truths, and suggested plans which have been worked out in different parts of the country. She was unfailing in resource, of unbounded hope and courage, so familiar with all other workers in the field that no thread of their experience seemed unknown to her. Generous with time, thought, and energy, spending freely for the cause, she not only planted definite fields which are now being reaped by others, but scattered freely by the wayside. So it happened not only that she gave her time and thought to the foundation of definite enterprises, but also that the results of her untiring study and investigation stimulated many others to work, whose contributions in the end were largely due to the inspiration consciously or unconsciously received from her.

Simmons College has deeply profited by all her thoughtful experience. She has always been generous in counsel, and has never failed to speak the helpful word when we have turned to her in any perplexity. Many of the readers of this JOURNAL will remember the experi-

ment carried on by the Women's Educational and Industrial Union known as the School of Housekeeping, where college graduates and other mature persons were gathered together in an early venture in the field of Home Economics. They lived in the houses which had been prepared for them by the Union, caring for the houses, and receiving instruction by trained teachers along all the lines of Home Economics which are now included in the school and college curriculum. Nearly all the instructors were women who had been trained by Mrs. Richards. Three of them afterward became instructors in Simmons College, for the School of Housekeeping was made over to the college, becoming the foundation of its school of Household Economics. We have in our library today the books which Mrs. Richards gathered together for the School of Housekeeping. We still have with us Miss Elliott and Miss Dike, who were trained by Mrs. Richards and whose contribution to the college has been of extreme value.

For the current college year a series of lectures by experts in Home Economics was arranged for the Department. Mrs. Richards was of course selected to deliver the first lectures of the series. She came to us four times, outlining the history of the Home Economics movement, interpreting the past and prophesying for the future. Her addresses were most stimulating, and on all sides the students responded to the inspiration of her ideals. When college re-opened after vacation and the sad message was passed from lip to lip, every one said, "How glad we are that we had her with us last fall!"

The college will always remember with grateful appreciation the help which Mrs. Richards has given us, and we shall know as the years go on that whatever the superstructure may be, the foundations of the Home Economics Department were laid in the royal contribution which she made.

SARAH LOUISE ARNOLD.

#### UNIVERSITY OF TENNESSEE.

Mrs. Richards was the life and inspiration of the Household Arts work at the Summer School of the South during its early growth. I was an instructor there during two sessions when Mrs. Richards was in attendance. She was a never failing source of help and guidance to the students who flocked to her for advice.

She was never too busy to be interested and always had a suggestion of value or a kindly criticism which awakened thought when she

did not entirely agree. It was her custom while there to rise early, and often by 5.30 or 6 a.m. she was deep in consultation with some student who could not perhaps remain for all of the session and was anxious to gain as much as possible. Mrs. Richards could accomplish more work during the twenty-four hours than any one I have ever known and at the same time appear to have leisure and time for social affairs and visits. Hers was a well ordered, well organized mode of living.

She was fond of a good time. It was always with much enthusiasm that she entered into the picnics after school hours, the excursions on the river, and the evening drives and supper parties. She seemed to have conserved an unlimited supply of energy which made all things possible.

Mrs. Richards, while at the school, always lectured at least twice daily and the attendance was always very large. She emphasized especially the economics of the household and tried to make the students realize the necessity for proper planning and wise use of time, energy, and money. There was nothing that she loved to talk about any oftener than wise management. Her talks were always illustrated with homely illustrations and she loved occasionally to introduce a good story or joke. She loved discussion in her classes and was quick at repartee.

Many students have come to me since for study who had their inspiration and interest in household arts aroused by Mrs. Richards. All who knew her as either friend or teacher feel the loss of a true friend and adviser. Her influence will never die.

ANNA M. COOLEY.

#### JOHNS HOPKINS HOSPITAL.

My first knowledge of Mrs. Richards and her relation to institution work was when she came to us at Johns Hopkins after I had established our preliminary course in which the students were taught in the nurses' dormitory the essentials of housekeeping before placing them in the wards. It was the first attempt to organize work of that nature with the body of students as a working staff, and I remember that Mrs. Richards was intensely interested in all our details of selecting food, cooking, serving, and of actual dormitory work in which groups of twenty to twenty-four students were working in "squads." Her intense interest and approval of almost everything



she saw was one of the greatest encouragements I had in our early days, and I remember that when a conference was held in Washington she urged some of those present to go and visit the school and see its attempt to train students by means of actual work. Before this, however, I had heard, through Dr. Hurd, of her work in studying the dietaries of certain Massachusetts institutions. I think the Massachusetts General Hospital was one of them.

ADELAIDE NUTTING.

#### MRS. RICHARDS AND CANADIAN WORK IN HOME ECONOMICS.

In later years Mrs. Richards' chief points of contact with the Canadians were through her books and the Lake Placid Conference. The books form part of the Home Economics section of many libraries and are looked upon as authoritative in all the Home Economics schools.

As president of the Lake Placid Conference Mrs. Richards always made the Canadians feel they belonged there, and took pains to bring the Canadian work before the conference. Evidence of this is found in the annual reports of the conference.

The older Canadian workers in the Home Economics field feel a personal sense of loss in the passing of Mrs. Richards. Most of us met her through the Lake Placid Conference and we shall always remember the whole-souled welcome she had for us and her pleasure when we had items of progress to report. We learned to love her for herself and to appreciate her ideas and to respect her visions for the future. The younger workers, who know her chiefly through her writing, look upon her as an authority in many lines, and an inspiration always. All of us will hold her in memory as one of the great ones in our chosen field.

MARY URIE WATSON.

*Macdonald Institute, Guelph, Canada.*

## PERSONAL TRIBUTES TO MRS. RICHARDS.

### MRS. RICHARDS AS A NATIONAL LEADER.

With the rapid spread of the Home Economics movement Mrs. Richards' influence widened until it was felt and recognized in all parts of our country. And as the movement became truly national she realized more and more the need of concerted and harmonious action on the part of its advocates and friends. She therefore gave herself more earnestly to the task of organizing and guiding the movement along right lines. By long journeys, by attendance at many meetings and conferences, and by much correspondence she made herself thoroughly acquainted with the conditions under which the movement was developing in different regions. Oftentimes she was able to give renewed impetus where obstacles had been encountered or to impart fresh enthusiasm where hope had been long deferred. Everywhere she was welcomed as a wise counsellor and an inspiring helper.

When she came to understand that a national movement like this needed a public organization in which its scope, purpose, and requirements could be freely discussed and through which the general interests of the cause effectively promoted she threw herself into the effort to establish the American Home Economics Association, and as its first president did much to perfect its organization and establish it on a firm footing. And her co-workers gladly put her forward as their national leader and congratulated themselves on having such a wise, enthusiastic, and self-sacrificing chief.

It was fortunate indeed that the Home Economics movement had such a national leader at this time. For Mrs. Richards had the sound scientific training and knowledge which enabled her to appreciate the necessity of establishing Home Economics on a broad scientific foundation in order to meet the requirements of the home life of the future. But she had also in good measure practical discernment and common sense. She saw clearly that this branch must deal with actual things and conditions and establish and pursue a national practice. She had rare tact and broadmindedness which permitted free expression

of opinion whether she agreed with it or not and yet brought the discussion to definite and reasonable conclusion. She had a shrewd and kindly sense of humor which dispelled friction and brought unity of feeling if not of belief. She had a hopeful outlook and encouraged all whom she met to go forward whatever obstacles might seem to prevent. She saw that in a national movement the varying conditions of different regions should be recognized and she planned therefore to have all sections of the country represented in the working force of the national association.

Under any circumstances the name of Mrs. Richards will be long remembered and her influence will be felt wherever in the United States Home Economics is a living force for good. But it is especially gratifying to know that the suggestion of a permanent memorial to her is being warmly and widely welcomed.

A. C. TRUE.

*U. S. Department of Agriculture.*

My acquaintance with Mrs. Richards began when I was a graduate student in the Boston Normal School for Household Art. It was my good fortune to know her as a teacher, adviser, and friend.

Early in 1898 the task of reorganizing the Department of Home Economics in the Kansas State Agricultural College became mine. This included the revision of the course of study leading to the degree of B.S., and the changing of the basis of the subject from an industrial to a scientific one. In it Mrs. Richards' advice was most helpful. And she was my adviser when from 1901 to 1907 I was in charge of the Department of Home Economics in Ohio State University and helped solve the question of modifying courses in other departments to meet the special needs of the department of Home Economics. Later in the University of Wyoming, 1907 to 1910, opportunity had presented itself to affiliate the work of this department with the activities of the home by preparing outlines for home and club courses of study and circulating them through the coöperation of the Household Economics Department of the State Federation. In this phase of the work Mrs. Richards saw large promise for the future, and during the last conference I had with her at Denver in 1909 we discussed particularly this problem of university extension.

MINNA A. STONER.

*University of Dakota.*

In December, 1902, Mrs. Richards made a trip through Canada. She spoke at McGill University in Montreal, at Queens University, Kingston, and at the Lillian Massey School of the University of Toronto, where she was introduced to her large audience by Prof. Goldwin Smith in terms of the highest appreciation. She spoke also at Ladies' College, Whitby, Ont., at St. Thomas, at Peterboro, and at London.

She was everywhere received with the greatest respect by the college presidents and other officials. She had a conference with the Ministers of Education for Ontario, and everywhere she went she deepened the people's faith in the educational and social value of Home Economics as taught in school and college.

Her greatest service to Canada was in her influence on the men and women interested in the development of Home Economics. They imbibed inspiration, they shared in her hope.

ALICE A. CHOWN.

*Toronto, Ontario.*

I first met Mrs. Richards in 1894 in her laboratory in the Institute of Technology. I was then an instructor in chemistry in the University of Nebraska and was visiting chemical laboratories in the East.

Many years later I was surprised and pleased to receive a letter from Mrs. Richards, congratulating me on the fact that the legislature of Nebraska had made an appropriation for a woman's building in which our department of domestic science should be housed. As Mrs. Richards had so many interests and such a large circle of friends, it seemed to me remarkable that she should see this notice in the newspaper and then take the pains to write me words of congratulation. Later we secured her to give the address at the dedication of our new building.

For this purpose Mrs. Richards came to Lincoln and spent three days there, January 18 to 20, 1909. After the dedicatory exercises at which she gave the address she shook hands with hundreds of people. When the guests were gone, I went to her room, and instead of finding her exhausted after her strenuous day, I found her sitting at a table writing, apparently as bright as ever. The next day she spoke at convocation before the students of the university on the subject of human efficiency.

On her way to Lincoln, she attended several meetings and the same was true of her return trip. Of course she took a prominent part in



every meeting where she was present. Mrs. Richards' visit was a help and inspiration to both students and teachers in my department and I shall never cease to be thankful that she came to us as we began our work in our new building.

ROSA BOUTON.

*University of Nebraska.*

I remember so clearly a time when Mrs. Richards was lecturing at Teachers College and I was assisting in the Domestic Science Department. I wished her opinion on some work and she was as fresh to give it as though she had not just finished talking. Then we lunched in Horace Mann lunch room, because again I had questions and she wanted to see how the lunchroom was going at the same time. When the position at Lake Erie College was vacant I remember her sending for me to talk it over and after I had decided to go there her generous response to my questions, even by letter.

Her readiness to put herself into the middle of your problem has been a constant incentive to me to pass on that helpfulness in my small way. Somehow, as soon as you met Mrs. Richards you had the feeling that you had always known her. She never had to waste any effort in getting acquainted. I never stopped to think what Mrs. Richards thought of me because she really was not thinking of me at all, it was my problem that she was interested in and there was no time to think of anything else.

RACHEL H. COLWELL.

*West Virginia University.*

I took Mrs. Richards' course in Knoxville, Tenn., in the summer of 1905. It consisted mainly of informal discussions and was most helpful in giving a broad and sane view of the subjects. She also invited me frequently to her room to discuss with her the needs of my own particular work. In these talks she gave me practical suggestions, and also inspired me with an unbounded faith in the work as an educational and a social influence.

ELIZABETH G. HOLT.

*Athens, Georgia.*

It was my privilege to know Mrs. Richards for about fifteen years. In the daily intercourse of her office and in the revision of the Chemistry of Cooking and Cleaning during the early part of this time, her

strength of intellect, clear vision, and mental alertness were a revelation. She seemed to me to stand alone as a leader at that time. In the later years, a closer relation with her in different interests connected with Home Economics increased my admiration and added to it a warm friendship.

The constant impression I received was that she was a *seer*. She saw clearly future needs along educational lines and she lived to see most of her prophecies fulfilled. It was often said of her that she was twenty years ahead of her time and she used to enjoy referring to her earlier books in which the desirable conditions for home life were outlined in a way that was called at the time Utopian; but these conditions are now recognized and accepted. This vision into the future made her an incomparable leader. To know her and to talk with her was an inspiration.

Last spring she gave three lectures at Simmons College. Fortunate, indeed, were the young women who heard these lectures. So many expressed the same thought—"her face," "her simplicity," her "breadth of view," impressed those young women as they did earnest workers everywhere. "She made me feel that *I* must work with more devotion and sincerity." That was the usual result of her talks.

She was preëminently a *helper*. She gave liberally, but not wastefully, of her time and knowledge. Everyone who sought her laboratory left her stronger and better able to see clearly the next step.

Now that the inspirer, the wise leader, the clear seer has passed beyond, every project in which she was interested must be carried on with all the more earnestness. If any of these projects are weak, she would want them strengthened; if workers are needed, she would wish them found and thoroughly trained.

S. MARIA ELLIOTT.

*Simmons College, Boston, Mass.*

Which one of us is not counting over these days the benefits Mrs. Richards conferred upon us through the stimulus of her boundless energy, the scope of her conceptions, the strength of her purposes, the nobility of her ideals? The full extent of the world's indebtedness to this able, practical, skilful, broadminded pioneer of reformed methods in domestic management is incalculable; not the least part of this debt is due to the insight which detected that the sphere of the home-maker's interests and work is as broad as life, with every department of which it is so intimately linked.

Little did I dream as I read her cordial welcome to me in my new home, characteristically full of plans for the future for us both, that these were her last written words to one who can never forget the faithful friendship, the ever ready help and sympathy, the frank comradeship formed many years ago by correspondence and cemented ten years since when it was my privilege to be her guest at Boston. Who can grudge the rest after toil, the reward of honest, unremitting, joyous labor?

ALICE RAVENHILL.

*Vancouver's Island, B. C.*

Mrs. Richards was always entirely and simply personal in dealing with a situation. She did not try to fit personalities to a theory but she did have a keen realization of the important truth that we must use people as they are, not as we would like them to be, and she put her mind on how the main ends could be accomplished with the people available.

When I was appointed to my present post I went to Boston and talked over the whole thing with her. It was during the American Home Economics Association meeting of 1909 and she could not find time for me during the day. You remember how she was up at five to start things in her laboratory, presided in meetings all day except when she slipped away and read a paper before some other of the scientific associations there meeting, ignored luncheon in order to attend to the laboratory, and gave the evening to association affairs. But she found that I did not mind sitting up late, so in her room after the evening meeting on New Year's eve we talked from half-past eleven to half-past one, and Mrs. Richards was just as fresh and keen and interested as if it were early morning.

A characteristic bit about Mrs. Richards, I think, is what she said about our Practice Home. She seemed to like it very much, but of course she commented on things that might be better. She glanced keenly about at the woodwork which, not of our volition, but because it was so when we took the house, had many curves and convolutions, and said "now you can just use that as an example of how things ought *not* to be. When the girls clean this they will see for themselves how much more sanitary is plain woodwork." Then when she came to the kitchen, she said, "Why is this floor bare?" It was explained to her that the director had thought it advisable to have as many kinds of floor as possible in the building. "All wrong," said Mrs.

Richards, "of course they ought to know how to scrub a bare floor, but it's the worst kind of economy to have them doing it. There ought to be a linoleum on this floor." The linoleum went down at once.

ISABEL ELY LORD.

*Pratt Institute.*

I like to feel that her last message to us was one for the housewife. In her last course of lectures at Pratt Institute her theme to the students was not methods of teaching so much as the ways of helping the housewife personally; one troubled woman came at the close of a lecture for advice on some question of home administration and Mrs. Richards, quick to put her ideals into practice, at once suggested that an instructor from the Institute be sent to the home and there aid and advise her.

Through Mrs. Richards' influence and advice a new position for trained women in Home Economics has lately been created in at least one university. The University of California last spring appointed, as a direct result of Mrs. Richards' work there, a trained dietitian whose duty it is not to provide food for the students, not to lecture or conduct classes, but to go among the students and into their boarding clubs and fraternities and advise them on their own boarding problems under their own individual conditions.

Such work as this was, at the last, the nearest to Mrs. Richards' heart and it is good news that the American Home Economics Association is to raise a Memorial to Mrs. Richards, which will interpret for the housewife the latest findings of science.

GWENDOLYN STEWART.

*Scranton, Pa.*

The one occasion when I met Mrs. Richards, at a meeting of the National Education Association years ago in Denver, vividly impressed two things upon me—the quickness and accuracy of her memory, and the wideness of her interest, to say nothing of her personal charm and kindliness.

I happened to arrive rather early at one of the Home Economics meetings and so drifted into a front seat. Mrs. Richards came and greeted me, and asked my name. On my reply, she grasped my arm with: "Why, *you* are the one who helped to organize the Portland clean market campaign and became market inspector. Didn't you?" Now



that event was quite four years in the past. In a few questions she "picked my brains" of the leading features of the affair—cause, organization, method, results. "Now," she said, "I shall call upon you to speak later. We are discussing the high school course of study, but never mind that. Just stand up and tell them what you have told me about the clean market work. Perhaps we can get some other teachers to see that domestic science can be taught outside as well as inside the laboratory."

Hearing that she was going to the Coast, I asked her if it would be possible for her to pass through Portland, and give an address. "Ah!" she said with what must have been a very characteristic twinkling smile, "Police regulations are not enough? You think you need a 'revival' and an 'evangelist' from time to time?" Which I assured her was exactly true.

The personal touch and encouragement certainly sent me back to "till my own little plot" more vigorously; and Mrs. Richards' interest in the clean market movement led many of the teachers—assembled from many different cities—to ask me for further details, and to wonder, at least, whether they might not do something along similar lines.

LILIAN E. TINGLE.

*Supervisor of Domestic Science,  
in High Schools of Portland.*

My first knowledge of Mrs. Richards was as the author of the Chemistry of Cooking and Cleaning, at the beginning of my own work in domestic science in 1890. Boston became my Mecca; and at the very first opportunity I presented myself with a note of introduction at the old office in the corner of her laboratory, and found the ready welcome that she so happily gave, no matter how busy. The first remark of hers that I recall was sceptical and challenging, "Teaching cookery from recipes on cards doesn't count!" "But," I said, "why teach that way?" A gleam came into her eyes as she leaned back with folded arms in characteristic attitude, "Well, what do *you* do?" Then followed a delightful give and take, and that moment began a friendship that counted. This memory would seem almost too small to recount, except that it typifies the experience of many workers in the Home Economics field. To all of us she has been suggestive, resourceful, administering the tonic of a high standard, appreciative of sincere and original work.

True to her New England type, her approval was a matter of inference rather than direct expression, yet one can hear still her "Good!" when occasion warranted. Truly it was this simple and happy personal touch, the quality that so often brought the remark, "Mrs. Richards is a *dear*," that made her larger work so potent in its effect. And there is no one else like her.

HELEN KINNE.

*Teachers College, New York City.*

In meeting Mrs. Richards, I have always felt that she was greatly interested in the work here, and the knowing that there was a strong woman to whom we could go for advice and counsel has in itself been a help. In the fall of 1906, there was a good deal of talk by people opposed to Household Science that it was only a fad and was not here to stay. I wrote Mrs. Richards about it and she wrote back as follows: "The study of healthful living conditions has come to stay, the particular designation of the various courses is immaterial. Physical degeneration and mental flabbiness is too apparent in Anglo-Saxon communities to be ignored. Economic and ethical studies, whether in the departments of sociology, of ethics, or of science are bound to come more and more to the front.

"The investigation of household problems is bound to come before the research department, as the investigations of water supply and sewerage problems have come. There will be university courses in these subjects just as soon as the colleges will give credits for high school work."

ANNIE L. LAIRD.

*University of Toronto.*

A woman of Mrs. Richards' calibre could not be provincial. Even though living in Boston, the home of many reforms, she was able to recognize in the younger West the greater opportunity for progressive experimental work. Many trips she made West to encourage and inspire us in our pioneer work. Often she said, "You are not bound by traditions as are we in the East. You are free to try whatever methods seem to you to be best. You can help work out the problems for us."

EDNA D. DAY.

*University of Kansas.*

When cookery was introduced into the public schools of Boston in connection with Mrs. Hemenway's work, Mrs. Richards' connection with it was quite unofficial but she gave valuable suggestions freely and was tremendously interested in the progress of the work. She gave one very suggestive lesson to the first class of five that we trained for public school teaching. I know of no one who gave more generously and always of her best than did Ellen H. Richards.

AMY M. HOMANS.

*Wellesley, Mass.*

## SOME LESSONS I HAVE LEARNED IN THE LINE OF PHILANTHROPIC WORK.

A REPORT MADE TO MR. ROBERT TREAT PAINE REGARDING PLANS  
FOR NEW BUILDINGS FOR THE WELLS MEMORIAL ASSOCIATION.

ELLEN H. RICHARDS.

(1) All true help to our neighbors, to mankind in the broad sense, must be educational, and much of it indirect work. Very often we must not allow our neighbor to suspect what we really want to do for him. All education is slow work and makes little apparent headway except with children, but through them it spreads to the family.

(2) We can not give this true help until we can get the point of view of our neighbors and look at our enterprise through their eyes, then we can make them participants in it so that they will be confiding, ready to tell us how things may better please the wider neighborhood. This sense of part proprietorship in the scheme is, I believe, essential to success.

(3) The prejudices of the neighborhood must be carefully considered and only then will any effort to overcome them be successful when the first two propositions have been carried out. Take as a motto—Win the confidence and respect of the neighborhood and you can lead them anywhere; drive them, never.

(4) In order to do this one must not start too far above them, for instance, too much finish and perfection will drive away those one wishes to attract. A certain homely familiarity attracts most strongly. The best lesson I ever had came to me the other day when I asked where the teachers from a certain school came from. "Oh! from our own section, we do not want to make the people unfit to live in their country, only to help them to live better in it."

(5) If I were now to undertake such work as was in mind by you in planning the Coffee House, I would first convert the architect and have the restaurant and kitchen so as to have the best lighted and the cheeriest corner and not so large a room at first that it could not be crowded. Mankind loves a crowd and where everybody goes is the place to go. I would not have the billiard room in any way connected or in sight.



A great many people look askance at billiards. I believe women and children keep away very largely from a billiard room; and in the question of food it is first the women and children we must reach.

(6) I would fit up simply but with the utmost cleanliness and with an eye to future extension, which, however, should not be evident. In choosing helpers, I would start with no drones, only workers, and those not too far above the people to reach them. Many a Pleasant Street customer of the New England Kitchen has been won over while making change or even over washing the unclean pail. A customer once gained, I would not attract attention to the large things I was doing. Hold him or know the reason why. Somebody of influence, as the priest, could vouch for your respectability. Use all right, mercantile methods, give certain privileges, hot and cold water, "change for a quarter," etc., etc. This means that even the scrub women and chore boy are part and parcel of this kindly work for one's neighbor.

#### THE ART OF RIGHT LIVING.

America today is wasting its human possibilities even more prodigally than its material wealth.

We seem to have assimilated so deeply the idea that man is lord of all the earth that we do not include man himself in the class over which he rules.

The inner sense of ineffectiveness is the unrecognized cause of the restless discontent so prevalent today. No person who is accomplishing something, seeing it grow under his hands to what it was in thought, is discontented.

We have lost pride in our work and have transferred our distaste for poor work to work itself, to the great danger of our physical and moral health.

Pleasure in work lessens expense of living more than any other single thing.

Power to work is man's capital.

An enthusiasm for health must be aroused by some means if an effective life is to be maintained in the midst of the increasing menaces to its full perfection.

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RICHARDS, ELLEN H. (nee Swallow), A.M., S.B. (M.I.T., 1873,) D.Sc., (Smith 1910), Fellow American Association for the Advancement of Science, Member American Institute of Mining Engineers, Public Health Association, Association of Collegiate Alumnae, National Geographic Society, National Conservation Association, American Chemical Society, Society of Arts, American Economic Association, Non-resident Member Washington Academy of Sciences.

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## EXHIBITS AND PRIZES.

Mrs. Richards earnestly believed in the teaching power of exhibits and all other means of ocular demonstration by which interest is aroused in the problems of daily living.

She herself says in a little leaflet entitled *Exhibits and the Home Economics Movement*:

To the casual onlooker the growth of the domestic science cult may seem to have been fortuitous or spasmodic or sporadic even, but there is a distinct trail back to the Philadelphia Exposition of 1876, when America was awakened to its own deficiencies in the culinary art, and in house furnishing and decoration among other things. These deficiencies clearly indicated the necessity for a wider knowledge of science in household management. The manual training idea developed from the work of Russia and Sweden shown at this exposition gave impetus and opportunity to American adaptation. Many lines of progress started in this world exposition of 1876. We are concerned now with but one little field.

The cookery side developed faster than the other departments of household management, and domestic science came to mean chiefly a knowledge of food. The Chicago Exposition had its Rumford Kitchen, an exhibit under the auspices of the State of Massachusetts. This practical illustration of scientific principles modified the ideas of the world as to the place and importance of cookery in education. Indeed, there seemed a distinct danger that other lines would be neglected, so that in the Exposition at St. Louis it was determined to show the wide scope of the subject as it had been developed in the sessions of the Lake Placid Conference and elsewhere. A space was furnished under the name of the Mary Lowell Stone Home Economics Exhibit. This illustrated the application of modern knowledge to home life, chiefly in economics and æsthetic lines, all bearing upon the health and efficiency of the people.

Her own work as an exhibitor began apparently in 1886. Mr. Charles R. Allen of the Massachusetts State Board of Education writes:

In 1886 I was employed in connection with Dr. A. H. Gill of the Massachusetts Institute of Technology by Mrs. Richards to work out a system of blocks and charts which should show the chemical constituents of the human body. Our bases, I think, were the analyses and average ration figures which had been worked out in Germany a year or two previous, and my work was to get out a model set of charts and samples to bring those figures into practical shape. This work included (1) A set of charts showing the cost of a unit of nutrition as found in a number of definite articles as purchased at market prices, and a chart showing



the analysis of a number of food articles in terms of water, proteid, carbohydrates and fats; (2) a set of blocks showing the average composition of the human body in terms of water, carbohydrates, fats, mineral matter, etc., another set showing the average income and outgo in water, carbon dioxide, proteid, etc., for twenty-four hours, and a large number of prepared specimens showing the composition of various standard foods, that is, sets of bottles containing the actual amount of water, cellulose, proteid, starch, etc., in one pound of the article.

My immediate connection with the investigation closed when these sample sets had been worked out and completed, but I have always understood that a number of those sets were made from the standard set.

Mrs. Richards evidently alludes to these blocks and charts in her article printed in the April number of the JOURNAL, where she speaks of a set being sent to Teachers College in 1886, and students of Home Economics will remember seeing them in other institutions and in exhibits. It was not until many years after that charts covering the same ground were made under the direction of the Office of Experiment Stations of the United States Department of Agriculture.

Her next interest of this kind seems to have been the exhibit of the New England Kitchen made, under the name of the Rumford Kitchen, as part of the Massachusetts Educational Exhibit at the World's Fair in Chicago in 1893. This was brought about by Gen. Francis A. Walker, then President of the Institute of Technology. Ten standard luncheons were furnished bearing on the bill of fare the then novel accompaniment of the estimated food value in proteid, fat and carbohydrates with the cost of raw materials in each case. The educational features of the exhibit also included pictures of various foreign kitchens, and a library containing Count Rumford's complete works, together with models of the various appliances invented by him. The *Rumford Kitchen Leaflets*, some twenty or more, written by people who were studying the food question from the scientific point of view, were distributed to visitors.

The Boston Branch of the Associate Collegiate Alumnae held an exhibit in Copley Hall in March, 1902, of the contributions of college women to Home Economics. The same idea on a much larger scale was developed in the fall of 1902 through the Mechanics Fair Exhibit. The Educational and Industrial Union had the whole Women's Department of the fair. Mrs. Richards was much interested. She, with Miss Fifield (now Mrs. Brooks), planned entirely the exhibits in Room 1, for which the money was furnished by Miss Emma Munroe in memory of Mary Lowell Stone, and the Mary Lowell Stone Home Economics Exhibit was collected in connection with this work.

Fitted out by Miss Emma Munroe, who also paid transportation and other expenses, the Mary Stone Lowell exhibit of household furnishings, photographs, etc., was sent to various clubs and institutions of learning. It was incomplete but in certain lines very suggestive, including house plans, plans for ventilation, floor coverings, and menus with calculated nutrients and costs. A study of the house-keeper's budget and business methods, such as the card catalogue applied to the home, were also on view. The exhibit was shown with many additions at the World's Fair held at St. Louis.

Miss Henrietta Goodrich writes that the Women's Educational and Industrial Union of Boston, when installing their many exhibits as in the section "Women in Industry Domestic Service," in connection with the exhibit of industrial conditions in relation to public health, safety and welfare held in Horticultural Hall in 1907 always consulted Mrs. Richards.

In a series of food exhibits held annually in Perkins Hall, with the idea of stimulating the interest of the Union consignors and of any other producers of food, in the quality of the articles they produced, and to help to formulate standards of quality for certain groups of cooked articles, for example, "breads," Mrs. Richards acted as juror and was consulted in planning these exhibits.

*Prizes.*—Mrs. Richards was also a wise adviser in many plans where prizes were offered. She was one of five persons requested, in 1889, by the Public Health Association to adjudge the \$500 prize offered by Mr. Henry Lomb of Rochester, N. Y., for an essay on Scientific and Practical Cooking for People of Moderate Means. She advised concerning the prizes offered for house plans offered by the Providence and Boston branches of the Association of Collegiate Alumnae, the result being nine or ten interesting plans. She was equally interested in the prize offered in 1906 by the Domestic Reform League Committee of the Woman's Educational and Industrial Union for the best practical plan of household management.

DEPARTMENT  
OF  
HOUSEHOLD SCIENCE

## MEMORIAL SERVICES FOR MRS. RICHARDS.

Many memorial services have been held for Mrs. Richards by the various organizations with which she was connected and interesting reports of the addresses and resolutions sent to the JOURNAL, but it is found impossible to print them. Their feeling is well expressed in the reports from the general meeting of the Association held in San Francisco which follows and the resolutions passed by the Institution Economics section at Lake Placid as given on page 408.

### MEMORIAL SERVICES AT SAN FRANCISCO, CAL., JULY 12, 1911.

Sincerest tributes were paid to the memory of the late Mrs. Ellen H. Richards, former president of the Lake Placid Conferences on Home Economics and of the American Home Economics Association, at the session of the American Home Economics Association, held at the art institute.

The meeting was presided over by the president, Miss Isabel Bevier of the University of Illinois. President Charles H. Keyes of the National Council of Education, was the first speaker, and he was followed by Dean Connelly of the Carnegie Technical Schools, Pittsburg.

From every one who spoke came the different glimpses vouchsafed them of Mrs. Richards' personality and intellect. Some had studied under her in the Massachusetts Institute of Technology; some had been associated with her in her great work as a sanitary engineer; others had been taught all the best and most useful things in Household Economics at her lectures or in her laboratory. There were those who had been engaged in research work with her; those who had been associated with her in educational work; those who had had the privilege of her personal friendship, and those who had been strangers in a strange city, to whom she had had time always to say a kindly word and do a kindly act. Her brilliant mind, her unusual learning, her unfailing womanliness, her tremendous power of work, her enthusiasm, her gentle friendship, her never failing sense of humor, her amiability, and her charm as a housewife and a hostess were fully described.

Those who spoke were, besides President Keyes and Dean Connelly, Mrs. Fanny Fern Andrews of Boston; Dr. Jessica Peixotto of the University of California, as a fellow professor; Miss Ethel Moore, who knew Mrs. Richards as a Vassar student; Doctor True of the Office of Experiment Stations, U. S. Department of Agriculture, at Washington, D. C.; Mrs. W. W. Douglas of the Collegiate Alumnae, which was founded by Mrs. Richards; Ludwig Rosenstein, who was a student at the Massachusetts Institute of Technology; Miss Helen Louise Johnson, associate editor of *Good Housekeeping*; Doctor Hyde of the University of California; Miss Ednah Rich of Santa Barbara Normal School; and Miss Ellen Huntington of the Utah Agricultural College.



Miss S. Maria Elliott of Simmons College, Boston, told of the plan for an Ellen H. Richards memorial fund which will, it is hoped, amount to \$100,000 by Christmas. The use to which the income of this sum will be devoted has not yet been determined. Names of all who would contribute should be sent to the president of the committee, Mrs. W. H. Barrett, 108 Johnson Street, Brooklyn, N. Y. or to Miss Ednah Rich, State Normal School, Santa Barbara, Cal.

## MINUTES OF THE EXECUTIVE COMMITTEE ON THE DEATH OF MRS. RICHARDS.

The Executive Committee of the American Home Economics Association desires to place on its records a statement of the services of the late Ellen H. Richards, the first president, and more recently, the honorary president of the Association.

Mrs. Richards was the founder of the Home Economics Movement in America, and until her death, March 30, 1911, she was, in all its councils and undertakings, universally regarded as leader. Graduating from Vassar College in 1870, and afterward going to the Massachusetts Institute of Technology to fit herself in scientific subjects, her attention was turned to the applications of science for human welfare, particularly in the matters of air, water, and food which so profoundly affect the daily life. While she became a leader in laboratory research and instruction in sanitary chemistry, in the Institute of Technology, and thus a scientific worker of national prominence, she attained a unique place and performed a world-service as a woman scientist, a pioneer who, on the one hand, encouraged women wishing to enter science, and on the other, pointed out one way, the most useful way perhaps, in which trained women may aid humanity—by applying science to the management of the household. Mrs. Richards was the dean of women workers in science.

In the first application of her scientific training to purposes of welfare, in 1882, she published the *Chemistry of Cooking and Cleaning*, and thus initiated her long series of books, the first books by an acknowledged scientific worker which treated of household problems. The mere titles of her books are an index of the service she rendered.

Mrs. Richards appreciated the value of organization in the promulgation of ideas. Through her initiative, the New England Kitchen in Boston opened the way to school lunches, the exhibit of the Rumford Kitchen at Chicago Exposition attracted national attention to better nutrition, and the Household Aid Company of Boston made the first well planned experiment in household service. Under her leadership,



the first conference on Home Economics was called at Lake Placid in 1899, and met annually during the next decade with her as its chairman; under her inspiration, it took form in a national organization, the American Home Economics Association, in 1909, and to the presidency of this organization Mrs. Richards was elected by acclamation; under her direction, this Association established the *JOURNAL OF HOME ECONOMICS*, the first scientific periodical devoted to advanced house-keeping. By unanimous vote, Mrs. Richards was reelected president of the American Home Economics Association for a second term, at the end of which time by her own request, she was allowed to give up the office of active president. The Association accordingly invited her to become honorary president, which office with that of the chairmanship of the Committee of the *JOURNAL OF HOME ECONOMICS*, she held at the time of her death.

Whatever the Home Economics movement may accomplish through public school instruction, through education in colleges and scientific schools, through the women's club movement, and through other agencies, it owes much to the wise mind and the generous impulses of this woman, who sought and found in the exact science of the laboratory a firm and enduring basis for the art of right living.

#### THE ELLEN H. RICHARDS MEMORIAL FUND.

On June 6 in the Margaret Cheney Room of the Massachusetts Institute of Technology, Boston, a meeting presided over by the first vice president of the Association, Dr. C. F. Langworthy, was held in order to discuss the raising of a memorial fund to the memory of Mrs. Richards.

Various speakers dwelt on the special interest felt by Mrs. Richards in the work of the Home Economics Association and its organ, the *JOURNAL OF HOME ECONOMICS*. She had remarked at the St. Louis meeting, when she declined to remain the active head of the Association, that she wished to devote herself to putting the *JOURNAL* on a firm foundation. She also had agreed with the editor that the time had come for very definite and practical help to the housewife by bringing to her attention in the most simple and usable form the results of scientific investigation.

The outcome of a discussion on these points was embodied in a resolution that an *ELLEN H. RICHARDS MEMORIAL FUND* of \$100,000 be raised, having for its object the collection, interpretation, and

dissemination of the results of scientific investigation in connection with the improvement of daily life, the fund to be raised under the auspices of the American Home Economics Association. The fund will be intrusted to a board of at least five trustees representing for the present the American Home Economics Association and the family of Mrs. Richards. It was also the sense of the meeting that the permanent committee, when formed, should seek legal advice immediately, in order that the fund may be properly safeguarded and expended along lines intended by its founders.

The committee of five finally selected to have charge of the raising of the fund is as follows: Mrs. William Hunter Barrett, Chairman, 108 Johnson Street, Brooklyn, N. Y., Dr. C. F. Langworthy, Office of Experiment Stations, Washington, D. C., Miss Isabel Hyams, 26 Wales Street, Dorchester, Mass., Miss Ednah A. Rich, 303 Sota Street, Santa Barbara, California, and Dr. B. R. Andrews, Teachers College, N. Y.

This committee has been hard at work since its appointment and has collected the names of 150,000 persons who are interested in Mrs. Richards and in the Home Economics movement. These names have been distributed according to states and cities and have been handed over to a number of state representatives, who will have charge of the soliciting. Every one on this large list will be called on personally and asked to give \$1.00. It is hoped that all will be seen by November 15 and that the reports of the workers will be received in time to make it possible to hand over the fund to the Association before the first of the new year.

Contributions and names of persons interested will be gratefully received and may be sent to any member of the committee.

CAROLINE WEEKS BARRETT.

## LAKE PLACID MEETING OF AMERICAN HOME ECONOMICS ASSOCIATION.

### ADMINISTRATION SECTION.

*Meeting by Special Invitation at Lake Placid Club, Lake Placid,  
N. Y., June 27-July 1, 1911.*

### PROGRAM.

*Tuesday, June 27.*

Memorial exercises for Mrs. Ellen H. Richards.

Tribute, Mrs. Melvil Dewey, Chairman.

The Proposed Memorial, Miss Sarah Louise Arnold.

Address of Welcome, Melvil, Dewey, President of Lake Placid Club.

The Existing Demand for Trained Workers in Institutions. Miss Martha Van Rensselaer, Cornell University.

Food Administration in Institutions: Plan, Equipment, Cost and Organization of Kitchens for Two Hundred. Miss Melvil Dewey, Lake Placid Club.

Lunch Rooms in Industrial Establishments. Miss Gertrude Sanborn, Nassmith County, Toronto, Canada.

Home Problems in Food Administration. Miss Flora Rose, Cornell University.

The Control of Insect Pests in Institutions. Dr. E. Porter Felt, State Entomologist, Albany, N. Y.

*Wednesday, June 28.*

The Purchase and Control of Supplies in Institutions—Methods of Specifying, Contracting, Storing, Distributing, Consuming and Accounting for Supplies. Mr. Henry C. Wright, State Charities Aid Association, New York. (A limited number of copies of Mr. Wright's report on Fiscal Control of Institutions are available for those attending; write to B. R. Andrews, Teachers College, New York.)

State and Municipal Documents for Institution Workers, Dr. C. F. Langworthy, U. S. Department of Agriculture, Washington, D. C.

New Uses for the Respiration Calorimeter. Dr. Langworthy.

*Thursday, June 29.*

Accounting and Records for Institutions. Professor William Morse Cole, Graduate School of Business Administration, Harvard University.

Graphic Charts of Business Records. Melvil Dewey, President of Lake Placid Club.

Supervision of Tenements. Miss Emily Dinwiddie, Trinity Church Corporation, New York City.

Welfare Work for Employes. Miss Helen H. Snow, Curtis Publishing Co. Philadelphia.

*Friday, June 30.*

Principles Underlying the Management of Institutions. Miss Adelaide Nutting, Professor of Institutional Administration, Teachers College, Columbia University; Scientific Management applied to Institutions, Royal R. Keeley, Taber Mfg. Co., Philadelphia.

Essential Training for Institution Management. Miss Sarah Louise Arnold, Dean of Simmons College, Boston.

Rural Sanitary Conditions, Miss Martha Van Rensselaer, Cornell University, Ithaca, N. Y.

Business session, election of officers, appointment of committees.

Resolutions. Continuation of discussion on accounting.

#### REPORT OF THE ADMINISTRATION SECTION.

MRS. MARY H. MORAN, *Secretary pro tem.*

The second annual conference of the Administration Section was even more successful than the conference held in 1910, both in attendance and in the papers presented and the discussions they inspired. The roll call at the opening session, June 27, showed that 46 members and delegates were present and this number was increased at later sessions to nearly 100. A matter for congratulation was the large number present from public institutions, particularly those in New York State.

Before proceeding to business a meeting in memory of Mrs. Ellen H. Richards was held. Mrs. Dewey, chairman, paid a tribute to Mrs. Richards and Her Influence and dwelt particularly upon her work as the founder of the American Home Economics Association. Minutes on the death of Mrs. Richards adopted by the Executive Committee of the Association were read by C. F. Langworthy, and Miss Sarah L. Arnold presented a report of the plans formulated by the Memorial Committee appointed to arrange a fitting memorial in honor of Mrs. Richards.

Beginning the business session, Mr. Dewey welcomed the conference to Lake Placid, and Miss Martha Van Rensselaer presented a paper on the Existing Demand for Trained Workers in Institutions, and Mrs. Dewey a paper on Institution Kitchens, Plan, Equipment, and Cost of Organization. Both papers were followed by discussions which were



continued at the evening session. A specific feature of the discussion was the recognition of the importance of careful studies of the relative amount of work required for household tasks and the possibility of securing increased efficiency with equal or less labor. Miss Gertrude Sanborn presented a paper at the evening session on Lunch Room Management, The Lunch Room in Business, and Miss Alice Freeman Walmsley briefly described the plans and methods followed in her management of Wellesley Inn which has proved a successful enterprise. A paper on Insect Pests by Dr. E. P. Felt, N. Y. State entomologist, with discussion, closed the evening session.

Professor William Morse Cole presided at the morning session, June 28, and introduced Henry C. Wright of the Russell Sage Foundation, who presented an interesting and valuable paper on Supplies: Their Purchase and Control, embodying the results of an extended study of public institutions in New York, Illinois, and Iowa, which Professor Wright has carried on for the Sage Foundation. A discussion followed the paper which was of special interest in that it embodied comments and experience contributed by Dr. Shamahan, Dr. Bernstein, Mr. Carroll, and other representatives of public institutions.

Miss Sarah L. Arnold, who presided at the evening session, and others discussed the establishment of the fund in memory of Mrs. Richards, and it was particularly urged that all present make an effort to send to Mrs. William Hunter Barrett, 108 Johnson Street, Brooklyn, N. Y., who is chairman of the committee having the fund in charge, lists of names of those who might be interested. The discussion of Professor Wright's paper was continued, and following this, two papers were presented by C. F. Langworthy, Chief of Nutrition Investigations, Office of Experiment Stations, namely: The Respiration Calorimeter at the Department of Agriculture and Experiments Which Are Being Made With It, and State and Municipal Documents as Sources of Information for Institution Managers and Other Students of Home Economics. In the discussion following it was recognized that such documents might be made of the greatest use as sources of information if regularly collected and brought to the attention of Home Economics workers, and various plans for making such literature more available were proposed.

At the morning session, June 29, Professor Henry C. Wright, who presided, introduced Professor William Morse Cole, who presented a paper on Scientific Accounting as Applied to Institutions, which was of great value and interest. Professor Cole outlined a rational system

for institution accounting and clearly demonstrated that such a system was essential to good management. Mr. Dewey followed Professor Cole, and gave a most interesting account of the business management of the Lake Placid Club; illustrated with a series of graphic charts. The evening session, at which Dr. C. F. Langworthy presided, was opened with a discussion of the papers presented in the morning session by Professor Cole and Mr. Dewey. Miss Emily W. Dinwiddie gave an account, illustrated by lantern slides, of the Sanitary Inspection of Tenements, which was based on extended experience in such work in New York and elsewhere. A paper forwarded by Mrs. R. M. Bradley on Market Inspection Work in Boston Carried on by the Women's Municipal League was read by Miss Katharine A. Fisher. Miss Helen H. Snow of the Curtis Publishing Company followed with a paper on Welfare Work in Industrial Organizations, which was interesting and valuable.

Miss Adelaide Nutting, who presided at the morning session, June 30, introduced Mr. Royal R. Keely, who discussed Principles of Scientific Management Applied to Institutions. Mr. Keely is associated with Mr. F. W. Taylor in his scientific management work, and presented material not only interesting in itself but of great value for its suggestiveness. Miss Sarah L. Arnold presented a paper on Essential Training for Institution Management, and Miss Martha Van Rensselaer one on Rural Sanitary Conditions and Inspection.

A business meeting of the American Home Economics Association closed the morning session, at which a letter of greeting from the president of the Association, Miss Isabel Bevier, was read, and plans were presented which have been formulated for the Graduate School of Home Economics by the committee having the matter in charge, of which Mrs. Alice P. Norton is chairman. The Graduate School will be held at Lansing, Mich., in the summer of 1912, coincident with the Graduate School of Agriculture.

The chairman, Dr. C. F. Langworthy, read a report of the Executive Committee outlining proposed changes in the Constitution and By-Laws of the Association which will be presented for voting at the next winter meeting of the American Home Economics Association. This meeting is to be held in Washington, D. C., December-January, 1911-12, the Association meeting as one of the affiliated meetings of the American Association for the Advancement of Science. The report of the Committee on Nomenclature was presented and adopted. A committee consisting of Mrs. Melvil Dewey, chairman, Miss

Adelaide Nutting, Miss Mary Urie Watson, Miss Martha Van Rensselaer, and Mr. Melvil Dewey, was appointed to frame resolutions expressing the feeling of the Conference at the death of Mrs. Richards. The resolutions presented later were as follows:

The institution economics section of the American Home Economics Association records its profound sense of loss in the death of Mrs. Ellen H. Richards, who was pioneer, leader and inspirer in a vitally important work which has developed in the past twelve years a hundred fold in the numbers actively teaching and disseminating her ideals of home and family life which she termed euthenics, or the new science of right living.

As representing many institutions we realize that the influence of her work for many years to come will have great practical value in securing greater efficiency of administration.

Equally with our professional loss do we feel that there has left us a personal friend who always gave generously of her best to every one who sought her sympathy and counsel.

The evening session was a business meeting of the Administration Section of the American Home Economics Association, with Dr. C. F. Langworthy in the chair. The following recommendations from the Executive Committee were presented:

"(1) To recommend to the Executive Committee of the American Home Economics Association that the name of the Administration Section be changed to 'Institution Economics Section,' and that this precede the name 'American Home Economics Association,' on all printed matter.

"(2) To insert the words "and Institution" in the title of the JOURNAL, to read "Journal of Home and Institution Economics."

"(3) To recommend that the membership annual fee be changed from twenty-five cents to one dollar.

"(4) Recommended that members attending the Conference be given opportunity to contribute one dollar or more toward defraying the expenses of printing the Proceedings."

All of these motions were carried.

The following officers were elected: Mrs. Melvil Dewey, honorary chairman, Miss Adelaide Nutting, chairman, Miss Martha Van Rensselaer, secretary and treasurer. A recommendation was adopted to the effect that the other members of the Executive Committee of the section be appointed by the chair, and that committees already in existence be continued with power to add to their number.

A committee consisting of Professor Henry C. Wright, Miss Mac-Millan, and Mrs. Mary H. Moran, appointed for the purpose, pre-

sented resolutions expressing the appreciation of the Conference for the hospitalities and courtesies extended by the trustees of the Lake Placid Club.

The business meeting was followed by a discussion of a number of topics which had been presented at previous meeting.

Efficiency in institutional service was suggested as a special subject for next year.

Drives, excursions, and other opportunities offered for enjoying Lake Placid and its beautiful surroundings were a feature of the Conference always welcomed by those whose good fortune it is to attend these gatherings.

## AMERICAN HOME ECONOMICS ASSOCIATION.

### EDUCATION SECTION MEETING

WITH NATIONAL EDUCATION ASSOCIATION, SAN FRANCISCO,  
JULY 11-13, 1911.

*Tuesday, July 11, 2.30 P.M.*

The Home Economics Movement. Miss Isabel Bevier, Professor of Household Science, University of Illinois, Urbana, Ill.

Addresses:—In Memoriam—Mrs. Ellen H. Richards, Late President of the Lake Placid Conferences on Home Economics and of the American Home Economics Association. Speakers from various organizations.

Report from committee on Ellen H. Richards Memorial Fund.

*Tuesday, July 11, 6 P.M.*

Informal dinner at Techau Tavern, of delegates and friends, with reports from the field.

*Wednesday, July 12, 2.30 P.M.*

The College Curriculum in Home Economics. Dr. A. C. True, Office of Experiment Stations, U. S. Department of Agriculture, Washington, D. C.



A Four-inch Lesson in Health and Economy. Miss S. Maria Elliott, Simmons College, Boston.

Round Table: The Teaching of Home Economics, Miss Ednah A. Rich, State Normal School, Santa Barbara, Cal.; Miss Sarah M. Hummel, University of Washington; Miss Ellen M. Bartlett, Supervisor of Domestic Science, San Francisco; Miss May Secrest, California Polytechnic School, San Luis Obispo; Mrs. Lulie Robbins, Director of Neighborhood Work, Speyer School, Teachers College, Columbia University; Miss Isabel Moore, Girls High School, San Francisco; and others.

*Thursday, July 13, 2.30 P.M.*

Nuts and Fruits as Food. Professor M. E. Jaffa, University of California.

The Application of Science to the Housekeeper's Daily Problems. Miss Ellen A. Huntington, Agricultural College of Utah, Logan, Utah.

Business Session: Report of committee on Graduate School of Home Economics. Discussion of the work of the Association; the JOURNAL; relation of local associations to American association, etc.

A report of these meetings will appear in a subsequent issue of the JOURNAL.

## EDITORIALS.

In the present number of the JOURNAL the editor has made an earnest effort to gather together a record of the main events that make

**A History of  
the Home  
Economics  
Movement.**

up the history of the Home Economics movement in this country. Some three hundred letters have been sent out bearing inquiries and requests for assistance, and without the many helpful replies that have been received this account, imperfect as it is, could not have been written. It is to be regretted that many whose testimony or point of view would have been equally valuable could not be reached at this season of the year. There are gaps in this history, and there are doubtless many errors, but it will at least form a basis for criticism and additions, and these it is hoped will be freely offered by our readers. Only so can a reliable history of this interesting educational movement be brought together and it should be done while those who saw its more important beginnings are still active workers.

At the summer meeting of the Administration Section at Lake Placid in July some seventy-five enthusiastic members took part but it was noted that only ten or twelve of this number belonged to the "old guard." The great majority were of the new generation who must carry on the work and build on the foundations already laid. Without a sense of its historical background, a full knowledge of the sources of its present power, no movement can succeed without great waste of force. It is hoped that this number of our JOURNAL may present to our younger readers in whom the hope of the future lies, some material for this valuable perspective and that it may help to give their work that sense of proportion which characterizes a broad and progressive movement as distinguished from a number of sporadic efforts.

And may the counsels of that noble and tireless worker whose name we now unite to honor prevail in all future work for the upbuilding of the home.

Subscriptions for the JOURNAL will be started with any month desired by the subscriber, but the editors strongly advise beginning with January of each year or ordering back numbers to that date.

**Subscriptions  
and Back  
Numbers.**

Copies of the issues of February and April, 1909, and of February, 1910, will be furnished to libraries only, in order to complete files, as our stock of these issues is very low. We repeat our offer to buy copies at 40 cents each payable in credit on subscription or in cash.

An unexpectedly large demand for our Housekeepers' Number (April, 1911) has exhausted our supply of this number as well. We shall be glad to purchase copies at 40 cents each.

## SELECTIONS FROM MRS. RICHARDS' PUBLISHED WORKS.<sup>1</sup>

### CONSERVATION BY SANITATION.

The endeavor of medicine to adapt itself to modern conditions has been more noteworthy than the efforts of either law or theology. Its high moral code of disinterested service to all has kept the ideals of medicine in touch with progress.

The mechanical basis of modern life must come to the aid of moral and personal influence. It is not enough to tell men to do the right thing, they must be fenced in from the wrong thing. For all these reasons it would seem that the *Civic* or *Public Service Engineer* must be the emerging leader in community welfare.

Probably not more than twenty-five per cent in any community are doing a full day's work such as they would be capable of doing if they were in perfect health.

Sewers are built for draining away used water. Flues are just as important to serve as sewers for used air.

### HOUSEHOLD ARTS AND SCIENCES IN THE ELEMENTARY SCHOOLS.

Home Economics stands for: (1) The ideal home life for today unhampered by the traditions of the past; (2) the utilization of all the re-

<sup>1</sup>From a pamphlet presented to those who attended the annual meeting of the Association of the Women of Massachusetts Institute of Technology, January 7, 1911, at which Mrs. Richards was presented with \$1000 as a research fund.

sources of modern science to improve the home life; (3) the freedom of the home from the dominance of commercial interests and their due subordination to ideals; and (4) the simplicity in material surroundings which will most free the spirit for the more important and permanent interests of the home and of society.

The watchword of the future is the welfare and security of the child.

#### WHY WOMEN ARE TO BLAME FOR THE HIGH PRICES.

To regulate the cost of living to one's income requires two things: An ethical standard which enables one to resist temptation, and a power of control over expenses only to be had by a system of accounts.

Of all the "combines" which tend to raise the cost of living the combine of social opinion is most potent.

If the trusts have caused the late high prices it is because the American housewife has allowed herself to be bamboozled, browbeaten, enticed, hoodwinked, and flattered into buying unnecessary things, and unnecessary costly things—because she was ignorant of relative values.

From the tramp who refuses to saw wood for a meal to the housewife who declines to earn her keep by a study of household accounts personal exertion has become distasteful.

If America is to stand a successful republic its women must cope with the family budget and secure good value for the money they spend.

#### EUTHENICS.

You must have the will power, for the sake of your child, to bring to his service all that has been discovered for the promotion of human efficiency, so that he may have the habit, the *technique*.

If the swarms of dwellers in the busy hives of industry have no sense of their humanity, if they do not use the human power of looking ahead, that power which differentiates man from animals, what better are they than animals?

Let the furrows be plowed deeply enough while the brain cells are plastic, then human energies will result in efficiency, and the line of least resistance will be the right line.

The community cannot rise much above the level of the individual home, and the home rises only by the pull of the community regulations, or by the initiative of a few especially far-sighted individuals.



## FOURTH ANNUAL MEETING OF THE AMERICAN HOME ECONOMICS ASSOCIATION, WASHINGTON, D. C., DECEMBER 27-30, 1911.

The fourth annual meeting of the American Home Economics Association will be held at Washington, D. C., during "Convocation Week" of the American Association for the Advancement of Science and affiliated societies, December 27-30, 1911. The invitation to meet in Washington came to our Association from the Science Association and also from the recently organized Home Economics Association of Washington, D. C. Inasmuch as the summer meeting of 1911 was held in the Far West, it seemed to the Executive Committee advisable to hold the annual meeting in the East. Arrangements for the convention are already under way. The President of the Association has appointed the following committees: Committee on Program, Prof. Isabel Bevier, University of Illinois, Urbana, Ill., Chairman; Local Committee of Arrangements, Dr. C. F. Langworthy, U. S. Department of Agriculture, Washington, D. C., Chairman, Miss Emma S. Jacobs, Supervisor of Domestic Science, Washington, and Miss Alice Seiler, President of Washington Home Economics Association. Suggestions regarding the program should be sent at once to Miss Marlatt. In addition to the program of papers and addresses, certain matters of business will come up at this meeting, election of officers, reports of committees, and certain amendments to the constitution and by-laws.

Notice is hereby given of the following officers to be chosen: A president, three vice-presidents, a secretary-treasurer (or, in the event of the approval by the annual meeting of a proposed change in the constitution, a secretary and a treasurer) all for one year, one member of the council for four years to fill the vacancy caused by the death of Mrs. Richards, five members of the council for five years each, and one member of the permanent committee on nominations for five years. The chairman of the present committee on nominations is Professor Henry C. Sherman, Columbia University, to whom suggestions may be sent not later than December 15.

Amendments to the constitution and by-laws have been properly proposed, separating the offices of secretary and treasurer in the Association; providing for the organization of local affiliated associations and sections of the American Association; and changing the fees of the American Association; action on which will be taken at the fourth annual meeting in Washington.

BENJAMIN R. ANDREWS,  
*Secretary.*

August 23, 1911.

## NEWS FROM THE FIELD.

The Home Economics work at the New York State College of Agriculture of Cornell University embraces a four-year college course, and extension teaching.

The four-year course in Home Economics demands the same entrance requirements as other courses at the university. The first two years of the course follow the work outlined for all students in the college of agriculture with the addition of some courses not required in the regular schedule. The last two years permit specialization in some one or more of the branches included under the term Home Economics.

The freshman year requires English 8 hours; botany 6 hours; general biology 6 hours; introductory inorganic chemistry, qualitative and quantitative analysis 11 hours; and drawing 4 hours. The sophomore year requires organic and agricultural chemistry 10 hours; physics 8 hours; physiology 3 hours; and bacteriology 3 hours. In this year two courses in Home Economics are introduced, one of 8 hours on foods, and a second of 2 hours in House Sanitation.

The junior year requires political science 6 hours; applied bacteriology or plant physiology 3 hours; Home Economics, dietetics 8 hours; house planning and house decoration 6 hours; and woman and the family 3 hours. The senior year requires household management 4 hours; special problems 6 hours; and seminar 1 hour. In the junior and senior years opportunity is given for electing such studies as students may wish to specialize in. It is expected in these electives that those preparing to teach will elect some work from the department of psychology and pedagogy.

Opportunity is given for coöperation with the courses in plant physiology and bacteriology and for specialization in canning and baking with the horticultural department for work on fruits and vegetables, and with the medical college for physiological chemistry and special work for dietitians. House planning, decorating, and furnishing is made a prominent feature of the course in charge of a graduate of the college of architecture who has specialized in domestic architecture.

The course as planned is intended to prepare these students for home-making, teaching, dietary work, institution management, business positions in connection with food, shelter, and clothing, and expert care of children.

The Legislature of 1910 made an appropriation of \$154,000 for the Home Economics building. The plans embrace domestic science and domestic art laboratories, necessary class rooms, offices, a library, an assembly room, a cafeteria to be used as an educational feature and for practice in feeding large numbers, a bakery, and a small cannery.

The extension teaching covers (a) The farmers' wives' reading course; (b) the Cornell study clubs; (c) the home-makers' conference, one week; and (d) winter course, three months. The farmers' wives' reading course has a membership of about 17,000 farmers' wives of New York State. The work is conducted through

printed bulletins and correspondence. The Cornell study clubs are organized in rural communities for the study of farm home problems. The bulletins form a basis for the program of study. Reports are sent to the college of the work done, and the clubs are visited by the teaching staff of the college of agriculture, at which time lectures and conferences are held.

The home-makers' conference holds its annual meeting at the college during Farmers' Week. It is to be officered each year by members of the winter course in Home Economics. The winter course students assist the teaching staff of the department in arranging for this conference. There is a program of lectures and exhibitions on home subjects. The membership is made up of winter course students and all women interested in home betterment. The winter course students thus keep in touch with the college after they have left.

The three months winter course at the college embraces lectures on nutrition, sanitation, household management, and house planning and furnishing, together with laboratory work in cooking and sewing. There are no college entrance requirements for this course, neither is university credit given. It is in no sense a professional course, but it aims to prepare its students to become better housekeepers.

The Household Arts Club was organized by the seniors of the Home Economics department on February 24, 1911. The general purpose is to further, as far as possible, the work that the American Home Economics Association endorses. Only students having completed a certain number of courses with the required scholarship are eligible. The meetings, held fortnightly, consist of discussions of subjects of general and specific interest, often directed by instructors engaged in the various phases of the work. These meetings also afford an opportunity for Home Economics students to meet in a social way.

#### **University of Nebraska.**

Only students having completed a certain number of courses with the required scholarship are eligible. The meetings, held fortnightly, consist of

discussions of subjects of general and specific interest, often directed by instructors engaged in the various phases of the work. These meetings also afford an opportunity for Home Economics students to meet in a social way.

In Salt Lake City, April 8, 1911, a Utah Branch was organized with the following officers: Ellen A. Huntington, Agricultural College of Utah, Logan, chairman;

#### **Utah Branch of the Home Economics Association.**

Althea Wheeler, University of Utah, Salt Lake City, vice-chairman; Harriett L. Harris, Brigham Young University, Provo, secretary and treasurer; and Mrs. Helen U. Root, University of Utah, Amy Lyman, L. D. S. College, Mrs. Rhoda B. Cook, Agricultural College, and A. C. Nelson, State Superintendent of Public Schools, as the executive committee.

Committees were appointed to investigate school lunches, and to draw up uniform courses of study in domestic science and domestic art for the seventh and eighth grades.

The next regular meeting will be held at the time and place of the State Teachers Association, which will probably be the Friday and Saturday following Thanksgiving.

This body held its first convention on April 13 and 14 at Bellingham, Wash., with a membership of thirty-four.

One of the aims of the association is to raise the standard of the work in the State, where it is new and in a very undeveloped condition. Important committees were appointed. The Washington State Branch of the American Home Economics Association. One will aim to unify the courses in the high schools and grades by outlining courses which it is hoped the State Board of Education will adopt. Another is ready to give information concerning the best equipment for new schools, especially country schools. Still another is working to raise the qualifications for teachers employed.

Mrs. Ellen P. Dabney is president and Miss Grace K. McKibben, secretary-treasurer.

This body was organized May 13. The following officers were elected: President, Miss Grace Fuller, Director Domestic Science, Ypsilanti Normal School; vice-presidents Miss Agnes Hunt, professor of domestic science, Michigan Agricultural College, and Mrs. C. Q. Murphy, advertising director JOURNAL OF HOME ECONOMICS, Grand Rapids; secretary-treasurer, Miss Lenna F. Cooper, dietitian and director of domestic science, Battle Creek Sanitarium; and national councilor, Miss Maude Gilchrist, Michigan Agricultural College.

The constitution states some of the specific objects of the association (as study of household problems, the standardization of Home Economics courses, etc.) and provides for membership of all those interested in the work, either professionally or practically. The annual fee is fixed at fifty cents.

As a step in a movement to perpetuate the name of Mrs. Ellen H. Richards, prominent clubwomen of Scranton are to form a branch of the American Association of Home Economics. This was decided at a memorial service held May 9 in the Young Women's Christian Association auditorium.

Scranton, Pa.  
Branch of Home  
Economics Association.

The memorial exercise was arranged by a committee headed by Miss Lida Penfield and among the speakers were Charles Welsh, principal of the domestic course of the International Correspondence Schools; Mrs. Ronald P. Gleason, president of the women's club; Miss Gladys Jones, and Miss Gwendolyn Stewart.

Miss Mary L. Canfield, supervisor of domestic science, reports the beginning of an experiment in the change of hours for evening classes to the period immediately after the afternoon session. This change has been made for the convenience of the mothers of young children who can at that hour leave them in the care of older brothers and sisters. The movement was started by the Home Economics Committee but the Board of Education has now adopted it for a four month's trial.

Domestic Science  
in Newark.



## BOOKS AND LITERATURE.

**Domestic Art in Woman's Education.** Anna M. Cooley. Charles Scribner's Sons, New York. 1911. Pp. 274.

In this most timely book there is presented a full and detailed discussion of the field of domestic art, its relation to general education, the problems involved in presenting it, the study necessary in planning a lesson or series of lessons, economic phases of the subject, and how to keep in touch with progress in domestic art.

Part II deals with the planning of courses for elementary schools, Part III for secondary schools, and Part IV for higher institutions. There are very full and suggestive outlines of courses for each kind of school. The bibliography appended to each chapter is excellent, and there is also a selected bibliography as an appendix. The book lacks an index, which would seem to be inexcusable, none the less it is one of the most valuable books of the season.

**Educational Problems.** G. Stanley Hall. Two volumes. D. Appleton and Company, New York. 1911. \$7.50.

This contains chapters on Industrial Education, The Budding Girl, and Special Child Welfare Agencies Outside the School, of interest in Home Economics.

**L'Education de la Jeune Fille Contemporaine. Specialement de la Jeune Fille du Monde.** E. M. Rossel. 42 Rue de la Madeleine, Bruxelles. V. Mirquet. Pp. 298.

The chapters of this book treat the different aspects of the education of girls, including household arts education. It includes in its appendix outlines of instruction in household arts as well as in other subjects. It will be useful to those in charge of Home Economics courses, as a statement based on European conditions.

**Food and the Principles of Dietetics.** R. Hutchison. New York: William Wood and Company. 1911. Third edition. Pp. xx, 615, pls. 3, figs. 32.

The material in this volume was first brought together in the form of a course of lectures delivered to students at the London Hospital. As the volume is a comprehensive handbook of food and dietetics it has attracted a wide circle of readers who have found it valuable not only for the information it contains but also for the numerous references to original sources of information.

In this, the third edition, the author states that the text has been thoroughly revised and that the chapters dealing with diet in disease have been considerably enlarged, while a new chapter has been added on certain dietetic cures and systems. In this chapter such questions as vegetarian and lacto-vegetarian diet, purin-free diet, exclusive proteid diet, and sour-milk treatment are discussed. The author's summary, which carefully weighs the facts in the case, is in marked contrast to statements on these subjects which are so often found in print, and the chapter as

a whole furnishes another illustration of the need for calm and unbiased judgment based upon a full understanding of facts before reaching conclusions.

The chapter on artificial and predigested foods and artificial feeding is also of special interest, as it summarizes data regarding proprietary articles and commercial preparations.

**Cookery Book.** Mrs. H. Maclurcan. Melbourne, Sydney, Adelaide and Brisbane. George Robertson and Company. 1908. Pp. 482, 8th Ed., rev. and enl.

A large number of recipes are included in this volume for the preparation of meats, fish, vegetables, game, and other foods. Many menus are also given including menus for twenty-one economical dinners. A number of recipes are given for the preparation of food materials unknown or very rare in the United States, such as tropical pawpaws. Incidentally, the volume contains information regarding Australian food materials and food customs.

**Proceedings of the American Association of Medical Milk Commissions.**  
*Proc. Amer. Assoc. Med. Milk Com.*, 4, 1910. Pp. 266, pl. 1.

This volume contains the proceedings of the convention held at St. Louis, June 6, 1910, annual reports, papers presented, and similar material, together with a manual of working methods and standards. The papers include the following: The Production of Certified Milk, by S. Francisco; The Production of Good Milk for the Small City, by E. G. Hastings; Medical Milk Charities, by H. L. Coit; The Bacterial Content of Milk from Cows Continuously Stabled, by W. D. Frost; The History, Development, and Statistics of Milk Charities in the United States, by J. W. Kerr; Bacterial Multiplication in Milk, F. O. Tonney; Medical Milk Commissions and Bovine Tuberculosis, by E. C. Schroeder; Some Essentials for the Production of Clean Milk, by W. A. Stocking, Jr.; and Some Observations on the Milk Situation in Europe, by H. L. Coit.

**Primer of Sanitation, Being a Simple Work on Disease Germs and How to Fight Them.** John W. Ritchie, Professor of Biology, College of William and Mary, Virginia. World Book Company, New York. 1910. Pp. 200.

Appreciating the need of adequate instruction in the methods of preventive medicine and of public hygiene, and believing that the most effective way of reaching the present generation of Americans is through their children, the author has attempted to write in a simple form an elementary text book dealing with germ diseases and their prevention.

The first chapter is given to the establishment of the importance of such a study, after which the author considers in the following twenty-five chapters the cells of the body, disease germs and how they get into the body, the struggle between the body and disease, diphtheria, pneumonia, influenza, tuberculosis, typhoid fever, malarial and yellow fever, and small-pox. Causes, cures, treatment and prevention of these are discussed at some length.

The author has evidently attempted to eliminate certain objectionable features commonly found in text books of this type, by placing emphasis upon public health and citizenship rather than upon the anatomical and physiological aspects. For this purpose, the illustrations used differ somewhat from those of the more formal

and conventional type. While they have some points in their favor, they are in many cases imaginary, impossible, and lacking in movement—elements quickly noticed and appreciated by children.

In the hands of a wise, tactful, sympathetic teacher, who is able to select parts suited to young minds, and to give the selected material to them in a simple form to be understood and enjoyed, such a book might prove helpful and suggestive to teachers of even the lowest grades. As a text in the hands of children below the sixth grade, it is difficult to see its possible value.

THOMAS C. WOOD.

**Makers of Our Clothes. A Case for Trade Boards.** Being the Results of a Year's Investigation into the Work of Women in London in the Tailoring, Dressmaking, and Underclothing Trades. Mrs. Carl Meyer and Clementine Black. London: Duckworth and Company, Henrietta Street, Covent Garden. 1909. Pp. 304.

This is a book which should be in the library of domestic art teachers. It gives exact information as to conditions in the clothing trades in London, and much of its information will hold true for American conditions.

**Textiles for Commercial, Industrial, Evening, and Domestic Art Schools.** William H. Dooley. D. C. Heath and Company, New York, Boston, Chicago. 1910. Pp. 221, illus. 28. Price, \$1.00.

This is a simple, non-technical treatment of the subject adapted for those engaged in the wholesale and retail dry goods, wool, cotton and dress making trades. A very general description is given of the various fibers and their process of manufacture into cloth. Chapters also deal with the weaving, dyeing, and finishing processes. Descriptions and trade names of many fabrics of wool, linen, cotton are given, and there is a short appendix of simple tests for purity and strength. The illustrations are largely factory interiors. There is a full table of contents, but no index, which lessens the value of the book as a means of ready reference.

**Textiles.** A. F. Barker and other experts. D. Van Nostrand Company, New York. 1910. Pp. 369, illus. 86. Price, \$2.00.

This is a very comprehensive work covering the various phases of the textile industry. It contains brief histories of the various industries, with detailed descriptions of the fibers, preparation, spinning, dyeing, weaving, and finishing into fabrics. The chapters on mercerizing, dyeing, and carpet weaving, while brief, are very clear. The discussion of dyeing cannot, however, be used to replace Mathew's *Laboratory Manual of Dyeing and Textile Chemistry*. The chapter on designing is good in that it is not too technical for the general reader.

The value of the book is enhanced by numerous tables showing the classification of grades and varieties of raw materials, and the comparative production and consumption by countries. The data are largely from the English industries, but the United States figures largely in the statistics.

The photographs and diagrams are exceedingly valuable, and there is an index.

While treating the same subject as Mr. Dooley's the two books are not in any way identical, except in the broad outlines.

# THE Journal of Home Economics

Vol. III

DECEMBER, 1911

No. 5

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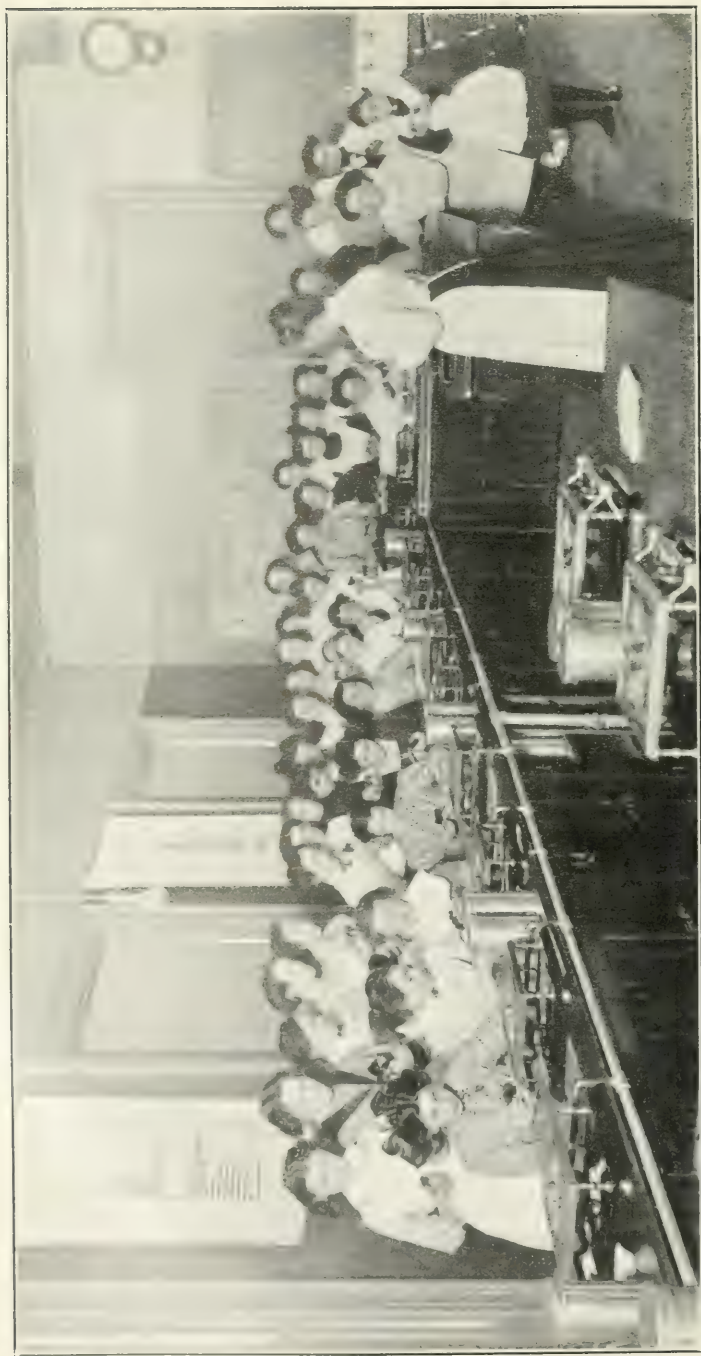
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Rural Schools of Minnesota: Class of Girls Judging Cakes after a Lesson.

# THE Journal of Home Economics

VOL. III.

DECEMBER, 1911

No. 5

## COLLEGE COURSES IN HOME ECONOMICS.<sup>1</sup>

DR. A. C. TRUE.

*Director, Office of Experiment Stations, U. S. Department of Agriculture.*

Our opinion of the proper scope and purpose of college courses in Home Economics will be materially affected by what we consider to be the true function of the college. On this point educators are as yet far from agreement. It is true that we are now in the midst of a movement to standardize the college as regards its requirements for both entrance and graduation. For this purpose an effort is being made to fix the pedagogical value of different subjects and courses and to express this in "units" or "credits." Obviously the exact determination of pedagogical values is very difficult. The results of educational standardization must therefore be considered as thus far comparatively crude and unsatisfactory. There is, however, little doubt that much good will result from the attempt to define educational standards. We shall at least have some definite points around which the discussion of educational values may be focused.

Meanwhile, discussion of the college is covering a wide range. At one extreme are those who hold that the college should devote itself to the promotion of intellectual activity in a broad and liberal way but without reference to the life work which lies before the student after graduation. Their argument runs somewhat as follows: After the rigid and narrow discipline of the secondary school, it is well that the youthful mind should survey the field of human knowledge, learn in a

<sup>1</sup>Presented at the San Francisco Meeting of the Education Section of the American Home Economics Association, July, 1911.

general way the course of development of thought and institutions through the ages, reflect upon his own nature and destiny, and seek to find himself in the world of nature and men. This is the best preparation youth in the later stages of adolescence can have for the more exact and practical studies which after-college days will introduce him to business or professional life and definitely prepare him for his vocation. And at the same time it will fit him to fill a large place in the social life of his times and to have much of mental satisfaction in both work and recreation.

At the other extreme are those who urge that amid the rapidly expanding limits of every branch of human knowledge and activity and the ever increasing exactions of vocational life, there is now no room for studies without definite aim and purpose. If the college has any place at all in our modern educational system, they say, it is to give training in those branches which are fundamental to the more practical knowledge required in the vocations, and this should be combined with studies directly relating to the vocations. The modern man will best get strength and breadth of intellectual power from the study and practice of the complicated and absorbing vocations for which higher education should fit him.

The truth is probably to be found between these two extremes and it is on this middle ground that the American college is more and more inclined to locate itself. Believing that man shall not live by bread alone, it will feed the youth on a more generous diet. Without neglecting the requirements for vocational success, it will train men with reference to their social activities and the refined pleasures of life. The broad development of body, mind, and spirit, and the specialization of function to meet the requirements of modern life are to be combined in the college course of the future.

We are apparently passing out of an era in which the scheme of free electives has been tried in a revolt against the narrow and rigid curriculum of the old college. The effort now is to secure appropriate groupings of studies so that the real tastes and needs of individuals may be met without sacrificing either a proper balancing of cultural and vocational requirements or proper standards for the conferring of degrees.

The subjects taught in colleges have been greatly multiplied and yet the end of this movement has not been reached. The methods of presentation of various subjects have been greatly modified but there is yet room for much improvement. The effort to secure a proper

grade of work in the college has been productive of great good and should be continued. The fear of lowering the intellectual strength of the curriculum or giving the lazy student the aid and comfort of "soft" courses has, however, led the college teacher to insist in some respects too strongly that all courses should have a relatively high pedagogical value. The natural desire of the college teacher to train students to be experts in his subject has often led to the ignoring of the just demands of those students pursuing a subject for a more general purpose. Certain subjects, *e.g.*, music and the fine arts, have been unjustly kept out of college courses because it was held to be too difficult to frame proper college courses in them or it was feared that they would be studied without serious purpose.

It is therefore necessary to plead for a broader study of the college curriculum with reference to actual requirements of students between the ages of eighteen and twenty-two years. With a careful weighing and grouping of studies, it will be possible to maintain a sufficiently high total of intellectual accomplishment for the course as a whole and yet permit the student to take certain courses for general information, or to gratify aesthetic or other tastes. We are beginning to see that a suitable time given to physical training and instruction in personal hygiene is not beneath the dignity of the college. In like manner training which will contribute to social amenities and personal accomplishments will ultimately be provided for.

Broadly speaking, college courses for women have followed too closely the lines laid down in those for men or have been drawn on the presumption that college women as a rule intended to pursue professional careers. The rôle of woman in the home and society, or as a dispenser of hospitality and a leader in the refined pleasures of life, has been too much neglected by the colleges of the better class.

These general considerations have a vital bearing on the problem of college courses in Home Economics. To them must be added considerations, also of a somewhat general character, which relate more directly to the subject of Home Economics itself.

To gain its rightful place in the modern educational system, Home Economics must be made a definite, that is a limited, subject, the scope and purpose of which can be fairly differentiated. As long as Home Economics is indefinitely considered as covering most if not all the work of a woman's department in a college or is broadly and loosely described as the science and art of right living, it will be difficult to make people understand why it should have any separate existence.



The fact that Home Economics derives its materials from a variety of arts and sciences is no argument against its independent existence. The same is true of many complicated educational subjects, *e.g.*, medicine, agriculture, and engineering.

The fact that at present there is much variety of opinion in detail as to what should be included in Home Economics need not prevent definition of the subject for practical purposes. Under such conditions it seems best that the standard definition should embrace only those subjects which it is generally agreed are included in the term. If later on general agreement to include other subjects is reached, the definition can be amended to include them. It is such considerations which have recently led committees constituted in a somewhat authoritative way to agree on a limited definition of Home Economics as a basis for further study and development of the subject. This definition, as formulated by committees of the American Home Economics Association and the Association of American Agricultural Colleges and Experiment Stations, is as follows: Home Economics, as a distinctive subject of instruction, includes the economic, sanitary, and aesthetic aspects of food, clothing, and shelter as connected with their selection, preparation, and use by the family in the home or by other groups of people.

Having this definition, it will be fortunate if there shall follow a general effort to formulate and strengthen courses of instruction and lines of research within these limits. The production of manuals, text-books, laboratory devices, and illustrative material along this line, together with the instruction of many students according to this program, will do much within a comparatively short time to give Home Economics an assured place and standing in the educational institutions from the university down and to bring legislators, philanthropists, and the general public to its support. When all this shall have been done, there will be time enough to consider the enlarging of the borders of the subject.

It is also very important at this stage of the development of Home Economics that it should be defined and explained in simple and homely terms. Attempts at the allegorical or transcendental treatment of the subject or the development of fanciful systems will only tend to convince the learned and unlearned alike that Home Economics is after all a fad.

College courses in Home Economics should be planned with reference to the conditions prevailing in the preparatory schools. At pres-

ent relatively few students will have had opportunity to study Home Economics before coming to college. It is therefore very desirable that the student have the opportunity to begin this subject in the college. The college course for beginners should take into account the relative maturity of the college student and therefore carry her more rapidly over the elementary practical work and combine with this from the beginning the more scientific elements. At entrance to college, credit should be given for Home Economics properly pursued in the preparatory school and thus the study of Home Economics in the secondary schools will be greatly encouraged.

Until Home Economics is generally taught in elementary and secondary schools, the colleges will be obliged to meet the needs of those students who desire to begin this subject in the college and at the same time provide suitable courses for those prepared in this subject in the lower schools. This creates an awkward situation when the number of instructors or students is very limited. When a sufficient number of students elect Home Economics to make possible the division of the class into sections, the problem becomes easier.

Courses in Home Economics should be offered for college women who desire to pursue them as a part of a course of general education and to fit themselves to manage homes and meet the general requirements of social life. These courses should be planned with reference to the actual conditions of home and social life and include both practice and theory. Such courses should be allowed to form a part of a general bachelor-degree course, that is without requiring the student to graduate in Home Economics.

Besides these more elementary and general courses of Home Economics, the colleges should offer special courses suited to the needs of those students whose major interest is in Home Economics and who are looking forward to professional careers in this line, as teachers, experts, nurses, dietitians in sanatoriums or public institutions, managers of hotels or of boarding departments of schools, public institutions, etc. The number and variety of such courses will depend on the funds at the disposal of the college for the Home Economics department, the number of instructors, and the consequent specialization of their work. Those courses should be first established for which there is the greatest demand and the institution with limited funds should seek to give the strongest courses it can in one or two lines rather than to spread weakly out over a large field.

To indicate how Home Economics may be introduced into a college

course arranged on the group plan, the following courses have been outlined. The number after each subject indicates semester credits, the total number of credits for the course being 130. Many other combinations of studies could of course be made. The first of these illustrative courses lays emphasis on languages, the second on sciences, and the third on Home Economics.

*College Courses for Women.*

| GROUP I.<br>(LANGUAGES.) | GROUP II. (HISTORY,<br>ETC.) | GROUP III.<br>(MATHEMATICS AND<br>SCIENCES.) | GROUP IV. (ARTS.) |
|--------------------------|------------------------------|----------------------------------------------|-------------------|
| <i>Course 1.</i>         |                              |                                              |                   |
| English.....20           | History.....10               | Mathematics.. 6                              | Music or Draw-    |
| Latin.....10             | Psychology....10             | Physiology.... 4                             | ing.....*10       |
| French or                |                              | Biology.....10                               | Home              |
| German.....20            |                              | Chemistry.....10                             | Economics.... 20  |
| —                        | —                            | —                                            | —                 |
| 50                       | 20                           | 30                                           | 30                |
| <i>Course 2.</i>         |                              |                                              |                   |
| English.....10           | History.....15               | Mathematics... 6                             | Music or Draw-    |
| French or                | Economics.... 5              | Physiology.... 4                             | ing.....10        |
| German.....20            | Psychology....10             | Biology.....10                               | Home              |
| —                        | —                            | Chemistry....20                              | Economics.... 20  |
| 30                       | 30                           | 40                                           | 30                |
| <i>Course 3.</i>         |                              |                                              |                   |
| English.....10           | History.....10               | Mathematics.. 6                              | Music or          |
| French or                | Psychology....10             | Physiology... 4                              | Drawing.....10    |
| German.....10            | Education.....10             | Biology.....10                               | Home              |
| —                        | —                            | Chemistry....10                              | Economics.... 40  |
| 20                       | 30                           | 30                                           | 50                |

\*The course in music or drawing might well include the history of music or the fine arts, as well as training in the art itself.

There will always be a variety of opinion in the case of such subjects as Home Economics, agriculture, engineering, or medicine, as to what should be taught under those heads and what should be left to the teachers of the fundamental sciences, such as chemistry, biology, etc. The problem is to work out what is desirable in the combination of theory and practice in Home Economics and then have the teachers of Home Economics give the instruction in the body of knowledge assembled under that head. There will be more or less overlapping at best, though pains should be taken to keep this down to a desirable

minimum. The chemist, for example, will teach many of the principles on which the art of cooking depends, but he will do this from the standpoint of the chemist. The teacher of Home Economics must develop the whole theory of cooking as directly related to the art and present both the theory and the art as a systematic whole. In doing this she should take advantage of the previous training of the students in the fundamental sciences and lead them to apply whatever scientific knowledge they have acquired, but she should not be deprived of the opportunity to present the scientific facts and principles underlying the practice. The point of view of the teaching and the proper combination of knowledge drawn from various sources, with a view to giving the student a rational practice, are the important factors in making strong courses in such subjects as Home Economics. We do not need to fear repetition as long as there is differentiation of purpose and aim in the instruction. We do not have enough of such repetition as will fasten scientific knowledge in the student's mind and make it usable in practical ways.

Home Economics also has its economic and sociological side and this should be developed in the college instruction in this subject. There will thus be a combination of facts and principles drawn from physical, biological, economic, and sociological sciences as related to the business and life of the home which, when properly assembled and arranged, will provide ample material for definite and well balanced college courses in Home Economics.

Under present conditions, the task of the college teacher of Home Economics is a very difficult and complicated one. By study and research she must assemble and enlarge a new body of knowledge and give it pedagogical form. She must prepare manuals, text-books, apparatus, and illustrative material in this new subject. She must fit Home Economics into college curricula which are in a rapidly shifting and largely chaotic condition. She must meet the requirements of collegiate standards in the intellectual and scientific strength of the Home Economics courses and at the same time overcome the narrow and false views of college pedagogics which oppose the introduction of the practical into college courses. She must meet the growing demand of the public that something shall be done to give women practical training for their life work, but she must stoutly resist the claims of those who would confine Home Economics to the merely empirical. At the same time she must tactfully oppose those faddists and sentimentalists, who, while honestly claiming to be the friends of



Home Economics, would really sap its scientific and practical foundations.

Besides giving sound and thorough instruction to her college students, she must do a large amount of propaganda work to secure the general recognition of Home Economics in the elementary and secondary schools, and all she can of that broader extension work by which the multitudes of untrained women in the homes are to be encouraged and inspired.

The college teacher of Home Economics needs, therefore, in unusual measure the aid of all intelligent people and particularly of the leaders of public opinion and the managers of educational institutions. College boards, presidents, and faculties especially should give earnest and sympathetic study to the problems involved in the development of strong courses in Home Economics and their adjustment to the complicated program of the modern college. Careful study of this matter will, I believe, constantly enhance the importance of Home Economics as a part of a well rounded and adequate scheme of college education for women.

## A FOUR-INCH LESSON IN HEALTH AND ECONOMY.<sup>1</sup>

S. MARIA ELLIOTT.

*Simmons College.*

Important principles often depend upon facts that can be shown by very simple experiments. Knowledge gained through the senses, is "knowledge that sticks," and perhaps none is so firmly fixed as that gained through the eye. The lessons in bacteriology to be taught from a four-inch dish with its thin layer of prepared jelly may be presented with almost as much value to the child of five as to the adult observer. Emphasis may be put wherever the need is greatest.

The child of five may expose the prepared "soil" cover and watch with absorbing interest the changes that take place. The adult is possibly even more interested and impressed. (The older pupil should prepare the "soil" and thereby learn the lesson of minute bacteriological cleanliness.)

<sup>1</sup> Read at the San Francisco Meeting of the Education Section of the American Home Economics Association, July 14, 1911.

When spots appear upon the surface of the formerly clear jelly the natural question "why?" will suggest answers that are lessons which every human being should learn for his own safety and comfort. With a little guidance, these conclusions are easily drawn. The open dish caught something from the air. This something was invisible. It grew; therefore, it must have been alive. There are spots of different shapes and colors. There must be different causes. Around some of the spots, changes occur, hollows form, liquid gathers—evidently these spots of living matter have power to change the jelly on which they were caught. This is a good chance for applied chemistry, as well as for bacteriology. It needs only a word to fix the facts that in dust there are invisible, living cells that use favorable soil and grow, producing changes in this soil, which is their food. The vile odor that will be present after some days of growth will prove most effectively the cause and conditions of putridity and the necessary measure of prevention.

The fundamental biological facts are easily grasped. If the experiment is always spoken of as a "dust garden," there is no difficulty in fixing the fact that these invisible cells in the dust are of plant, not of animal origin.

Let one dish be planted from still air. Note how few cells are caught. Why should the clothes worn in churches, halls, and other dusty places be so thoroughly cleaned, preferably out-of-doors? Why should some time elapse after they are brushed, if in the house, or after sweeping, bed-making, or other dust-spreading processes are carried on, before true dusting can be effective? The advantage of cleaning clothes out-of-doors, or better, the ideal principle of suction for the drawing out of all dust and its disposal by burning will be readily grasped.

The relations of living matter to light, temperature, and moisture can all be taught by placing one dust garden in the dark and one in the light, one in a refrigerator and one at the ordinary room temperature, or in an especially warm place.

The importance of fresh air, the healthfulness of sunlight may be strongly emphasized. If one garden be planted with spatters of saliva or mucus from the nostrils, the lesson can be taught that coughing and sneezing should be with closed mouth, covered nostrils, or averted head. Were such lessons given in all the schools, it is not too much to hope that before the end of the twentieth century, America would lose its shameful name of "a nation of spitters." Before

the end of the century, we might hope to eradicate the habit of making the mouth a third hand, to hold money, pins, and pencils.

Hygienic habits in the children will bring universal health conditions years sooner than statutes and laws. Health is an asset and a fundamental factor in economy. Therefore, all health-habits may be considered equally important from an economic standpoint. But, aside from health, an aim sometimes so far distant or indirectly attained that it does not furnish a daily incentive to correct hygienic teaching, there may be close, direct application to the care and preservation of food and clothing.

The housewife who sweeps her kitchen floor and immediately begins to can her fruit, is committing an offense against economics, as well as bacteriological laws. The closely covered warm milk, the tightly wrapped hot bread, the close, tight cheese dish, all encourage the quick growth of mold or bacteria and the consequent lessening of value or the complete loss of food, with the possible formation of ptomaines or poisonous products. The mold and pores on the tightly rolled clothes in the laundry basket or the bacteria on the damp dish-cloth or mop hung in the dark cupboard will follow the laws of development as surely as the voracious caterpillar will come out from the moth's egg. There is a cause for every effect. The youngest student may observe the effect and may be led toward the cause, thereby learning prevention, which is sanitation.

All these phenomena underlie the common daily facts of life and living. If once observed, there never again can be the same ignorance or carelessness in personal habits and in our relations with our fellows, both from the standpoint of prevention of illness with its economic waste, and with the preservation of food materials.

There cannot perhaps be found an experiment so simple in preparation, so suggestive in observation, so important in its applications as the one we have outlined.

## HOME ECONOMICS FROM THE STANDPOINT OF THE GRADE TEACHER.<sup>1</sup>

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In the Cook County (Illinois) Normal School under Colonel Francis W. Parker a study of "foods" was carried on with children in the grammar grades as far back as 1893. The most common articles of food were used, and these were tested as to their composition, the amount of water in each, and the number containing starch, albumen, fats, and oils being determined. This was a preparatory step leading to a study of the kinds and quantity of food necessary to meet the daily needs of the individual. The problem presented was to select a menu for one day that would furnish the food necessary to repair the daily waste. The necessary statements and Atwater's tables formed the basis for the work.

This was a crude beginning, but the interest was sufficient to carry the work through with a fair degree of success. The class, working together and not as individuals, prepared menus which would meet the demands for repair of waste. In addition to the kind and amount of food needed, the cost of each article was considered. As a means of giving a more definite idea of the quantities necessary, they were modelled in clay. The relative size of the pat of butter for each meal made, for instance, a very distinct impression. To give a more comprehensive knowledge of the kind and variety of foodstuffs, an excursion was taken to the largest grocery store in the city. This opened the way to the study of place geography in locating the countries from which the various articles had come.

It may be objected that this must have been too scientific, as it had little application to the child's experience, and could have little far-reaching effect upon his own choice of food; since the menus were constructed from the standpoint of the adult's needs. But in this work

<sup>1</sup> Presented at the St. Louis meeting of the American Home Economics Association, December 27, 1910.



there were three desirable elements. There was good experimental work in testing food materials, which suggested the idea that some materials are more valuable as food than others. There was a constant use of mathematics for a definite purpose. There was growth in power to handle materials and apparatus, or in muscular control. Last of all there was training in responsibility in the maintenance of the laboratory to see that all materials were cared for properly and that the room and utensils were left in perfect order.

What the work lacked was the opportunity to prepare the menus, to cook and serve them. With this, it was agreed, the circle of experience needed to gain intellectual, physical, and social control would be complete, so far as this subject could give it. With a prophetic eye Mr. Jackman said confidently: "The time is near when cooking will be a part of the curriculum for our elementary schools."

In 1900, seven years later, an experiment was tried in the Chicago Normal School in what Dr. Colin A. Scott calls "self-organized work." This is reported in his book, *Social Education*.

Here an opportunity was given the children in two third grade schools to present a plan for some work they would like to do, stating how much time they would need to finish it and how they would accomplish it. They were to work in groups or each by himself for a half hour twice a week.

As a result, of the fourteen groups organized during the year three were cooking groups. The first one organized was formed of five girls and one boy. They had no equipment, but one girl brought an old gas oven, another a heater, and the group interviewed the principal to secure his permission to have an attachment made so they could use the gas. Notwithstanding they were organized to cook "just to eat," they were led of their own will to the study of city departments of administration, to experiments to distinguish between butter and butterine, to printing their recipes with rubber stamps, to book-binding so as to obtain covers for their cook-books, to discussions of discipline when the boy failed to bring the materials assigned as his portion, to a study of mathematics to determine the cost of a cupful or spoonful when the articles were bought by the pound, and to a determination of what each child's share of the expense would be when the cost of the cupful or spoonful was known. Averaging is not always introduced into the third grade, but these children used the process correctly and easily after being once shown.

Another cooking group was composed entirely of boys. They said,

"We don't want to cook as these girls do. But if anyone should be sick in the house, then we should like to be able to cook something." They began with beef-tea. They, too, were led into experimenting, for they were told that beef-tea should not look gray when it is served as that shows that the albumen in the meat has become hardened and cannot be digested quickly. At the teacher's suggestion, they beat the juice out of some pieces of meat and compared it with the white of an egg.

The self-organized work of these two groups is full of suggestions for the grade teacher and the teacher in Home Economics today as to the many-sided development cooking may produce.

In October, 1905, a class of children of seventh grade age who had come together from many other elementary schools, was organized at the University of Chicago. Only a few of the class had been in the university elementary school. Some of the pupils were "over age," some were very young. Some showed excellent training in forming good habits; others seemed to lack much in habit-training in the right direction. What service could cooking render this grade in their development?

The work was so arranged that the class, with no distinction in regard to sex, spent ninety minutes in the laboratory the day they cooked. This gave time to prepare and cook the article, and have time for the equally important lesson, for this class, in washing dishes and leaving the room in order. The next lesson for the week was scheduled as "cooking science" and lasted one hour. This hour was given to an experiment necessary to clinch the point in the preceding cooking lesson, or prepare for the one following. Once more each week the class went to the cooking laboratory, this time to find the tables covered with blotting pads and equipped with writing materials. They proceeded to write up the week's work in notes or recipes—as well as it could be done in thirty minutes. Thus three hours each week were given to the solution of a very definite problem.

One part of the quarter's work was to prepare and serve a luncheon to the mothers of the children. This was a great event for this class, both from their point of view and that of the teachers. Coming with such a variety of school experience they lacked unity and class spirit, but this one big piece of work united them as nothing else could have done. The excellent opportunities for organization which were presented the teacher used to the best advantage in the cooking and serving of the luncheon. The boy who was apt to make a disturbance

in the kitchen because of his clumsiness was made head waiter. He filled this position with great dignity, alertness, and careful polite attention to details. He permitted no one else to assume the least responsibility in showing a belated guest to her seat and handing her a napkin. That piece of work was the first one for this boy that could be considered above criticism. He had an opportunity to reveal a power which his teachers little dreamed that he possessed. They began to see a solution of one problem in the class. The other children served the luncheon deftly and with a glow of pride. The mothers partook of the food with an equal pride in it and in the skill with which it was served to them by their children. The committee on dish-washing, or the "dirty-dish committee," faithfully performed its duties.

What service did the cooking give in solving the problem of helping each child, so far as possible, to have control of his powers and use them to the best advantage, or to use Dr. Dewey's words<sup>2</sup> to see that "the children day by day by their own activities move inevitably . . . toward culmination of themselves?" We may summarize the benefits as follows:

(1) The cooking won their interest and led to their best efforts without the continual prodding of the teacher. (2) It gave an impetus to the idea that there is something worth while inherent in work. This idea was carried over to other subjects. (3) It trained in control, something which this class much needed. (4) It gave them excellent work in construction. The class got together the necessary materials and out of a barrel and some hay made a fireless cooker, in which the delicious boiled ham was prepared for the luncheon. (5) A trip to market to buy some of the articles for the luncheon opened their eyes to the sources of foodstuffs and the distances from which certain articles come. (6) The luncheon developed a class spirit and made possible good team work. Truly the cooking was of very great service.

Cooking was also found to aid mathematics. "The training of attention and judgment acquired in having to do things with a real outcome ahead," to quote Dr. Dewey again, develops an appreciation of other work which at first sight does not appear to have "real outcome ahead." In order to solve the problems in cooking, certain mathematical processes have to be mastered. This is a direct help to the grade teacher for there is then a real motive for mathematics. She

<sup>2</sup> Child and Curriculum, p. 39.

thus in turn gives valuable aid to the cooking and brings her class to a higher development in the subject than would be possible otherwise.

In an article in *Elementary School Teacher* (vol. viii) Miss Jessie P. Rich describes work in which the grade teacher coöperated with her to their mutual advantage. The third grade in their geography study had become interested in raisins. The children asked, "What are they?" "Where do they come from?" "How do they grow?" "What kind of grapes makes a good raisin?" When most interesting experiments had answered some of these questions, the children wished to make individual bunches of raisins. They began with one-fourth pound of grapes, and the results of the experiment showed that the four ounces of grapes produced one ounce of raisins. This was made the basis of the following problems:

What is the weight of grapes necessary to make one pound of raisins? To make one-half pound of raisins?

What weight of raisins can be made from one pound of grapes?

If the grapes cost 8 cents per pound, what is the cost of one pound of raisins? Why is there a difference between this cost and the cost of one pound of raisins at the store?

The trays in California hold 24 pounds of grapes. How many raisins are made from this amount? What is their value?

This work made necessary a mastery of the use of the scales and the table of pounds and ounces, as well as of multiplication. The grade teacher's outlines for the period contain the following suggestions: "Problems involving addition and subtraction are demanded in cooking; problems from cooking involve a review of liquid measure and simple fractions." "Multiplication is needed in recipes in cooking just now."

Another illustration of the relation between mathematics and cooking in the third grade was found in the making of grape juice. The following data were sent to the grade teacher: A 5-pound basket of grapes costs 20 cents. When 8 pounds of grapes were used by sixteen children, 16 cups of juice were obtained. The individual recipe was 1 cup of juice and  $\frac{1}{2}$  cup sugar (costing 6 cents for 2 cups or 1 pound). The result was  $4\frac{1}{2}$  quarts of canned grape juice. From this data the following problems were devised:

- (1) Find the cost per child of the grape juice made.
- (2) Find the cost for all.
- (3) Find the cost per basket.
- (4) Find the amount of grape juice per basket of grapes.



Later in the course this grade entertained their mothers at luncheon. The problems in mathematics were many, including reducing and multiplying the recipes used for the cake; the cost of food; lists of provisions with the cost of each article; and the actual cost of luncheon.

The raisins made in the fall were kept and used in the cake for this luncheon. So the children began with the raw product and followed it through the steps of the process to the finished product, an experience never to be forgotten.

There was a strong social value in the luncheon. The grade teacher's notes read as follows: "The children felt their responsibilities, responded pretty fully to the unusual stimulus, and steadied themselves constantly in order to carry out successfully their plans. The majority of the pupils were conscious of their enlarged social opportunities and were happy to serve their friends both individually and in groups."

Another interesting experiment in which mathematics played a part was tried in the fifth grade. The class were making jelly and wanted to find out two things: (1) How much sugar is needed, and (2) whether the amount of sugar used affected the cost of the jelly. The general opinion on the second question was that an increase in amount of sugar would result in an increased cost per glass of jelly. Miss Snow's article in *Elementary School Teacher* (vol. viii) gives the results of the experiment in nine individual reports. The following is one of them:

In making grape jelly the question came up of how much sugar to use, so we tried to find out by experiment. In the tests, each child used a different amount of sugar to half a cup of grape juice. I used 6 tablespoonfuls to  $\frac{1}{2}$  cup of grape juice and boiled it at 220° F. This made nearly one wineglass full of jelly.

|                                                         |                     |
|---------------------------------------------------------|---------------------|
| Three-quarter basket grapes cost.....                   | \$0.15              |
| One-half cup grape juice cost.....                      | .01                 |
| One-half pound (1 cup) sugar cost.....                  | .02 $\frac{1}{2}$   |
| Six tablespoonfuls ( $\frac{3}{8}$ cup) sugar cost..... | .00 $\frac{15}{16}$ |

$$\begin{array}{r} 1\frac{1}{4} = 1\frac{8}{12} \\ \frac{15}{16} = \frac{10\frac{5}{8}}{12} \end{array}$$

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$$1\frac{11\frac{3}{8}}{12} \text{ or } 2\frac{1}{12} \text{ cents cost of jelly.}$$

Each child grappled with the subject of common fractions and mastered it without really knowing it, because he was seeking to answer the question, "How much sugar shall I use to make jelly?" His result became part of the class results needed to answer the question definitely.

A comparison of these results showed that, starting with the same amount of juice, when no sugar was used there was  $\frac{1}{4}$  cup jelly, and that the amount of jelly increased with the amount of sugar. The child who used equal amounts of sugar and juice had  $1\frac{1}{2}$  cups jelly or six times as much as the child who used no sugar.

From the good motive in mathematics came skill in manipulation, and speed and accuracy in the use of fractions. But above this there was presented in tangible form the idea of the value of each individual's work. Each pupil saw that it was necessary to the success of the experiment that he should carry through to completion carefully his part of the experiment and the mathematical computations. To the grade teacher here is one of the best helps toward growth in a community spirit which can be desired. When a child gets the idea that what he does is really valuable to the class and especially when he can see this himself without having to get the idea from his teacher's suggestion he is faced in the right direction and is steadied to put forth his best effort. Are we sensitive to the difference in the effect upon the development of the children of work performed under such a motive and work done for the selfish motive of trying to get the highest mark in the class? The cooking here puts a real value upon effort, one which the children appreciate and one which sends them to other problems in a healthful attitude, mentally and socially.

The culmination of the first quarter's work in cooking in the sixth grade is candy making for a sale, the proceeds of which are used for a picture or cast for the school room. Here again is a strong social motive which brings excellent results in effort.

Three kinds of mathematical problems arise in this work. The first is in connection with the thermometer. The children have used the Fahrenheit scale and now must become familiar with the Centigrade. They must understand that 180 points, called degrees, on one thermometer equal 100 points on the other. Enough problems are solved in the grade work to enable the pupils to change from one thermometer to the other readily.

The second problem is in connection with the boxes for the candy sale. These are made by the class, and are large enough to hold  $\frac{1}{2}$  pound. The dimensions of a box of the simplest rectangular shape are given. The class work out dimensions of different shapes but producing boxes of the half-pound capacity.

The third problem arises in determining (1) the cost of all materials used in making the candy; (2) the total amount received at the candy

sale; and (3) the net proceeds of the sale. When the proceeds have been expended in the picture or cast, the class have a visible expression of the result of their combined efforts. The picture goes with them through the elementary school, and then is returned to be an incentive to future sixth grades.

According to the present course of study mathematics in the seventh grade coöperates with the cooking, enabling the class to answer such questions as the following, after the preparatory experiments have been performed:

(1) Determine the amount of soda for a recipe using 1 cup molasses and 2 cups sour milk.

(2) Given the ratio of the weight of soda to the weight of cream of tartar, as 184:88:

(a) What proportion of baking powder is soda?

(b) What proportion of baking powder is cream of tartar?

(c) Which gives the more gas, 1 teaspoonful of soda or 1 teaspoonful of baking powder? How may we prove this? Prove it mathematically.

(d) In a recipe calling for two teaspoonfuls of baking powder will  $\frac{1}{2}$  teaspoonful of soda be a substitute as regards the gas given off? (One cup only of sour milk is called for.)

Here again is opportunity for mutual coöperation between the cooking and the grade teacher's work to the advancement of the work in each department. With this coöperation the children should reach the eighth grade fully equipped mathematically to solve all problems arising. The grade teacher however, needs, the recipe work to supplement her work if the class is weak in mathematics.

This paper emphasizes the aid mathematics receives from cooking, but it is no less true that place geography may receive an equal impetus from the work. A comprehension of the location of the sources of the various articles of food on our tables daily will demonstrate clearly that the whole world is brought to our doors. An excursion to a wholesale grocery store where the articles are seen in original wrappings seems an essential somewhere in the course.

Ruskin's words are of interest here:

"Cookery means the knowledge of Medea and of Circe and of Helen and the queen of Sheba. It means the knowledge of all herbs and fruits and balm and spices, and all that is healing and sweet in the fields and groves and savory in meats. It means carefulness and inventiveness and willingness and readiness of appliances. It means the economy of your grandmother and the science of the modern

chemist; it means much tasting and no wasting; it means English thoroughness and French art and Arabian hospitality."

This once accepted as the content of the subject, the grade teacher believes in it for what it does for the children. Some of the results may be summarized as follows:

(1) It furnishes opportunity for training in motor control such as is found in no other subject. This is valuable to all children and especially necessary to children weak in this direction.

(2) It teaches some knowledge of elementary science.

(3) It gives a better appreciation of the work done in the daily routine in the home. Dr. Dopp says, "No better means are available for assisting the child to understand the complex industrial organization of the present than to give him experience in some of the fundamental processes." Among the half hundred boys in a camp in the Wisconsin woods last summer was one who had grown to the age of sixteen surrounded by all the attention and attendants wealth could supply, but shielded from all kinds of manual work. He had received his education from tutors and so had missed the advantages which schools offer to give experience in the cost and time of the daily preparation of food for the family needs. At the camp he became much interested in dishwashing and it was a great revelation to him. Day after day he went to the kitchen and wiped dishes for an hour, interested to see the great piles of dishes pass through the process which left them in place on the shelves. He expressed great surprise that it took so much time each meal to care for the dishes. He asked about the preparation of the meal and with surprise inquired, "Does it take all that time and work?" The child who has had cooking at school knows with appreciation something of the cost of preparation of food at home.

(4) Cooking fits the children to be of social value in the home. With what joy did a sixth grade boy offer to bake a cake for the birthday party of the friend he was visiting. What pleasure comes to the child and the mother if he or she can get a meal when emergency arises, or can set the table or serve the meal. Dr. Scott would make this the opportunity for moral training when he says, "Moral training is but the subjective side of service to society."

(5) Cooking furnishes excellent motives for work in mathematics, geography, and composition.

(6) Cooking gives an opportunity for those children who are strong in practical lines and have good motor control, but who are weak in



history, geography, or mathematics, to measure up with their fellows. By the old methods and opportunities the child who could not memorize easily, write good papers, or work difficult mathematical problems, was too often made to believe he was far below his classmates, in all points. That child, if of a practical turn of mind, often surpasses the good book student in cooking. Last week when the general work of an eighth grade boy had been declared a failure, the cooking teacher said, "He is doing the best work in the class."

In short, the problem of the grade teacher and the teacher in cooking is the same: To lead them into the fullest possession of their powers; to help them "day by day to move inevitably toward the culmination of themselves." The watchword should be "coöperation."

### THE APPLICATION OF SCIENCE TO THE HOUSE-KEEPER'S DAILY PROBLEMS.<sup>1</sup>

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Home Economics workers of the "advance guard" have always considered the housekeeper a part and parcel of the problem in establishing Home Economics on a sound educational basis, but there has been little time or energy to spare for a prolonged consideration of her daily problems. Now that the pedagogical side of Home Economics is comparatively firmly established and well developed, it would seem as if the time were ripe for rendering assistance to the housekeeper. Therefore, the application of science to the housekeeper's daily problems will probably be attained, first, through the education of future housekeepers in science, and secondly, through investigational work in connection with the Home Economics departments in our colleges.

Educators have labored and finally converted others to the belief that there is as much mental discipline to be obtained from the practical application of science to problems in life as there is to be obtained from Latin or pure physics. There never has been any question in the West but that the education of woman for her position in the home or for an occupation stood in as dignified a position as the education

<sup>1</sup>Read at the San Francisco Meeting of the American Home Economics Association, July 13, 1911.

of the boy for his position as engineer, farmer, teacher, or physician. As a result it is observed that although western education has had a comparatively short period of existence, the education of the future housekeeper in science is well provided for. The chemist teaches weighing in quantitative analysis by determining the moisture content in food and accurate methods of analysis through the analysis of food; and according to the newer methods of teaching organic chemistry, he ignores many of the compounds and derivatives to the advantage of the hydro-carbons and carbo-hydrates. The botanist includes a study of plants used as food, and often digresses enough to allow a consideration of the textile fibres. The zoologist is eager and ready to include eugenics. The economist has always been in this practical procession, and it would not seem strange to see the mathematician join it soon. Thus the application of science to daily living is an established fact for the college girls who will be among the housekeepers of the future.

But the assistance which can be rendered housekeepers through investigational work seems somewhat more difficult to accomplish at present, because it necessitates a worker and ample means to do the work. The worker must have had thorough grounding in science in order to undertake the problem, and there are few women in the field at present who are thus well trained and who are not in demand for teaching. Those who are teaching and attempting to carry on experimental work will appreciate the truth of the saying that half a man in experimental work means a quarter of a man in the results obtained, and a quarter of a man means no man at all. I believe it is largely the fact that women have had only "quarter time" which has brought down upon them the criticism that women are inclined to dabble in experimental work. Therefore, the teacher of Home Economics finds it difficult to "squeeze in" experimental work with her teaching, and the time of the housekeeper is so broken that, although she may be well trained in science, she is wise not to attempt experimental work. Moreover, she has not the equipment. Then, too, since good work once accomplished should be made available for all, there should be a clearing house for such practical information when it is once obtained.

For example, in our western country districts where there is no gas, the fireless cooker has proved a boon to housekeepers. The principles upon which its efficiency depends are that the heat once acquired may be retained through insulation, and that many foods may be cooked

at a temperature below the boiling point. The Norwegians as early as 1867 used the cook box and later the Germans used their feather beds as insulators. In this country many insulating materials have been used, but by measuring accurately the temperature of the same quantity of starch solution packed in hay, excelsior, sawdust, newspaper, asbestos, hair, and mineral wool, it was found that mineral wool best conserved the heat. The minimum mass for satisfactory cooking was also determined and finally the question of economy in its use was considered and experimented upon. At the time this work was done, it proved economical of fuel, time, and energy only when used for those processes which require long slow cooking. Now, with the many improvements such as a cover to draw down quickly over the food while it is still boiling hot, or the introduction of hot iron plates into the cooker, it has been made even more economical. The results of this detailed work would be of use to the housekeeper.

Again, in this age of scientific management, it seems to me that the economic side of a problem is of as much importance as the scientific. Louis F. Brandeis, in his work with the railroads, and Mr. and Mrs. Gilbraith in their work with the bricklayers, have pointed out that in these days of "intensive business" it is necessary to measure small economies accurately and scientifically in order to produce efficiency. It will avail little to the housekeeper to have a problem solved scientifically if its cost in time or in money is prohibitive. Let me cite an example: The time honored coal range, which has been the first essential in so many households, is probably doomed to banishment as soon as a more efficient and economical method can be devised. The fireless cooker is but a step in that direction, but it is not inconceivable that central kitchens or bakeries may do the heavy part of the cooking more cheaply than it can be done in the home. This would mean that those methods of cooking which are now considered accessory might be so well developed that they would become sufficient to cover all needs.

In the hope of proving such an accessory method practical, some experimental work has been done with the electric range. In the intermountain west where mountain streams are numerous and their power is easily converted into electricity it would seem practical to cook by electricity. The housekeeper needs information not only in regard to the first cost of the equipment, but also in regard to the cost of running it. At present there seems to be but one electric range on the market which is at all practicable for household use, and this has all the objectionable features of the first gas stoves manufac-

tured, such as the low, back-breaking oven. This electric range with its oven, four discs, broiler, and utensils costs \$110.00 plus the freight. That there is economy in using the utensils which fit the discs may be seen from the fact that it costs 0.25 cent more to boil one quart of water in an ordinary aluminum teakettle than in a teakettle made to fit the disc closely.

The cost of running the range is enlightening. In the intermountain west the average cost of electricity for cooking purposes is 5 cents per kilowatt hour. Using this as a basis the following figures were obtained: To boil 1 quart cold water in a cold teakettle required 12 minutes' time and cost 0.75 cent; to bake a layer cake required 45 minutes (including the time required to heat the oven for baking), and cost 3.5 cents. To bake four loaves of bread required 1 hour 18 minutes and cost 7 cents. To cook a dinner for six consisting of cream soup, roast beef, roast potatoes, asparagus, white sauce, cottage pudding with hot sauce and coffee, required three hours and cost 33.5 cents; to heat the water for washing the dishes cost 5 cents more.

In comparing the cost of baking one loaf of bread with coal and gas, we find for coal 0.21 cents, for gas 0.25 cents and for electricity 1.75 cents. Therefore, cooking with electricity is as yet an expensive method of cooking and much slower. On the other hand, it does satisfactory work, it is cleaner than gas or coal and always ready, so that the optimistic housekeeper may hope that the electrical companies will develop the range to make it more efficient.

Other problems, such as high altitude cookery, which seems to be a question of density of gases so far as investigated, or the question of using Utah flour for bread and the difficulties with different yeasts, or the effect of the pasteurization of milk upon the organic compounds, could be worked out for the housekeeper by the Home Economics worker if she had the time and means for such work.

As a means to this end, Senator Smoot of Utah introduced a bill into Congress in March, 1910, which was in due course read twice and referred to the Committee on Agriculture and Forestry. This was a bill to provide for an increased annual appropriation for agricultural experiment stations, to be used in researches in Home Economics and for regulating the expenditure thereof. A portion of the bill reads as follows: "Be it enacted that there shall be and hereby is, annually appropriated out of any money in the treasury not otherwise appropriated, to be paid as hereinafter provided, to each State and Territory for the more complete endowment and maintenance of agricul-



tural experiment stations now established, or which may hereafter be established, the sum of ten thousand dollars, to be applied only to paying the necessary expenses of conducting original or confirmatory researches or experiments bearing directly on Home Economics, including both domestic science and domestic arts, and printing and disseminating the results of said researches or experiments, having due regard for the varying conditions and needs of the respective States and Territories. That bulletins shall be published as the experiment stations will publish them, etc."

As yet the bill has not been reported from the committee. It was reintroduced last spring and is still pending.

With our college girls as future housekeepers versed in science and its application, with well trained Home Economics workers devoting their whole time to research work, and with the experiment stations provided with sufficient means, the application of science to the housekeeper's daily problem would be assured.

## AN EARLY EXPERIMENT IN THE INTRODUCTION OF MANUAL TRAINING INTO THE COLLEGE CURRICULUM.

C. F. LANGWORTHY.

The records of Middlebury College show that Dr. Joshua Bates, who was president of the institution from 1817 to 1839, was interested in manual training and believed that it could be a part of college work.

The college was established in 1800 and at the time Dr. Bates became its president was passing through a period of financial depression. When Dr. Bates took up his duties as president there was much to discourage him, for the college was suffering from a lack of funds and from numerous changes in its faculty. Under his able direction the college entered upon a period of prosperity.

The records show that in 1829 a mechanical association was formed and that for a short time manual training was introduced into the college curriculum. For this work a shop was furnished and tools were supplied. About this time particular attention seems to have been given to scientific work, for chemical apparatus was imported from London, and a collection of minerals was made for use in college work. Apparently, the manual training course did not progress very satisfactorily, for in 1833 Dr. Bates attempted to raise a \$50,000 fund, principally for the erection of a new college building, but in part for the establishment of an efficient manual training department. The college building was erected but nothing definite seems to have come of the plan for manual training in the college, and the project was eventually lost sight of. These facts are briefly summarized in a publication issued in 1900, at the time the college celebrated the one hundredth anniversary of its founding.

It would be interesting to know what led Dr. Bates to conclude that a manual training department was a desirable part of the curriculum of a classical college and whether the idea was in accord with any general feeling at the time or whether it was a conclusion which represented only his personal views. The examination of old college publications and similar data would doubtless throw light on the subject, which is not without interest in considering the development of education in the United States.

## STUDIES OF METHODS IN FOOD PREPARATION: PASTRY.<sup>1</sup>

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If the preparation of food is to claim a place as an applied science, it seems necessary that the ordinary processes of cooking be reduced to a more exact basis than now prevails. With this object in view, we have been working with our advanced classes at the University of Chicago along several lines of investigation.

The first difficulty with which we were confronted was the lack of a definite standard of measure. Like others, our laboratory is equipped with glass measuring cups divided into thirds and quarters. But the capacities of these cups were found to vary anywhere from 225 cc. to 250 cc., so that it is not surprising that a cup of sugar might be found to weigh from 195 grams to 215 grams. A granite measuring cup was found on the market which is much more exact, as it is also more expensive. Even with accurate measures, however, it is difficult to fill the cups each time so that the weight of a given volume shall be the same. The number of times the flour has been sifted or the manner of filling the cup will cause a variation in weight.

From time to time a number of students have worked on the problem of standardizing measures and as a result of the large number of determinations the following averages have been adopted as tentative standards. A standard measuring cup should contain one-fourth of a quart (950 cc.) of water or 237.5 grams. On this basis a cup of milk weighs 247 grams, butter 216 grams, sugar 195 grams, pastry flour 100 grams, and bread flour 113 grams.

While we have used these weights satisfactorily in our studies of methods during the past two years, we recognize the desirability of the establishment of official, uniform standards through the agency of such

<sup>1</sup> Presented at the St. Louis Meeting of the American Home Economics Association, December 30, 1910.

an organization as this association. Weighed amounts must be used when experimental work is done, but these amounts to be of practical use, at present, must be translated into measures. We hope therefore that this association will assume the responsibility of determining the necessary standards. Eventually it may be desirable to express recipes in weights to the exclusion of measures, but that day is probably distant. It is interesting to note that after becoming accustomed to weighing materials to be used, some of the students are not content to use measured amounts even in practical work.

One of the cooking processes, which has been studied in considerable detail by several students, is that of pastry making. Because of the limited number of ingredients used, and the comparative simplicity of the process, this subject lends itself especially well to investigation. The aim of the study has been to discover the influence of various factors on the cost and quality of pastry.

#### MATERIALS.

The materials selected for testing in this study were as follows:

Flour: (1) Bread flour, a well known commercial brand; (2) pastry flour (ordinary) of 4 different brands; (3) pastry flour (fancy); and (4) bread flour mixed with various proportions of cornstarch.

Fat: (1) Lard; (2) butter; (3) a commercial lard substitute; (4) butter and lard; and (5) butter and the commercial lard substitute in several proportions.

#### METHOD.

The usual method of making plain paste was used in most cases. According to the preference of the individual, the fat was mixed either with a knife or with the tips of the fingers. Except in a few cases, all of the fat was added to the flour at the beginning—not added by rolling into the paste. The crusts were baked at a temperature of 240°C.

#### PROPORTIONS.

(A) *Fat*.—The proportion of ingredients necessary to make crusts of equal tenderness varies with both the kind of fat and the kind of flour used. In every case more fat is required with the bread than with the pastry flour. Of the various fats, more butter than lard was



required and more lard than the lard substitute, while with mixtures of fats, intermediate amounts may be used. In our tests, the amounts used with one cup of bread flour varied from 62 grams of the lard substituted to 85 grams of butter; and with one cup of pastry flour from 43 grams of the lard substitute to 62 grams of butter. Roughly stated,  $\frac{1}{3}$  cup of fat for bread flour is needed, but if butter is used one tablespoonful more should be used, or if the lard substitute, one tablespoonful less. In general, one may consider that  $\frac{1}{4}$  cup of fat is sufficient for pastry flour, but this should be increased by  $\frac{2}{3}$  tablespoonful for butter and may be decreased by  $\frac{1}{6}$  tablespoonful if the lard substitute is used. The proportion of fat used, then, may vary from  $\frac{1}{6}$  cup to  $\frac{1}{3}$  cup for bread flour and from  $\frac{1}{6}$  to  $\frac{1}{3}$  cup for pastry flour.

As the proportion of fat is increased, the proportion of salt needed increases also. Of the various fats, the lard substitute demands the largest proportion and butter the smallest. The usual usage is from four grams (less than one tablespoonful) for butter to six grams ( $1\frac{1}{2}$  teaspoonful) for the lard substitute to each cup of bread flour.

(B) *Water*.—The amount of water used varies with the amount and kind of fat and also with the kind of flour used. In general the larger the amount of fat used, the smaller will be the amount of water required. But bread flour with  $\frac{1}{3}$  cup of fat will require as much or more water than pastry flour having only  $\frac{1}{4}$  cup of fat. However, the amount of water used depends upon the individual worker. In almost every case one of our students used a larger amount of water than did another. This is due to her personal preference for the kind of crust resulting. When the smaller amount of liquid is used a certain degree of pressure with the hands is necessary to form the paste, and the crust when baked is so friable that it can with difficulty be taken from the plate. That made with the larger amount of liquid, while still tender, is more consistent and there is less danger of breakage.

The amount of water to be added is one of the most variable factors. It is influenced not only by the kind of flour and the kind and amount of fat, but also by the temperature of the paste and the fineness of division of the fat in the flour. Such factors as these may account for variations from the normal.

The amount of water used has a decided influence upon the tenderness of the crust. In an experiment where different amounts of water were used with the same flour and same amount and kind of fat, 30

grams of water with 1 cup of pastry flour and  $\frac{1}{4}$  cup of lard made a crust which was friable (or as it seemed to the student, "too rich"); 36 grams produced a crust of desirable tenderness; while 40 and 44 grams resulted in a product more or less tough.

#### INGREDIENTS.

(A) *Flour*.—It was agreed that bread flour makes a good crust, ordinary pastry flour one which is more tender, and fine pastry flour the most tender of all. However, to some the difference in tenderness between the ordinary and fine pastry flours was not considered sufficient to compensate for the increased cost. One experiment was made in which bread flour was modified by different percentages of cornstarch. When 15 per cent of cornstarch was added, the resulting crust could not be distinguished from the fine pastry flour, and the cost was much less.

(B) *Fat*.—Butter gives the best flavor and the lard substitute the poorest. If butter and the lard substitute are combined in equal proportions, the flavor of the latter is fairly well covered. The lard substitute makes a crust which is very tender and friable but not so flaky as lard. Because of the softness of the fat it is more essential to keep the ingredients cold when using it.

#### COST.

When the different fats are used with the several types of flour in amounts suitable to produce crusts of approximately the same quality, there are marked differences in the cost. Obviously the use of butter increases the cost most markedly. The use of the fine grade of pastry flour also raises the cost considerably. The cheapest crust is made by using the lard substitute, with ordinary pastry flour. This cost only 2.5 cents per cup. The most expensive made was by using butter with bread flour, which cost 8 cents per cup. The cost was calculated on the average retail price of materials—*e.g.*, lard, 18 cents per pound, butter 35 cents, the lard substitute 15 cents, pastry flour 5 cents per pound, bread flour 24 lbs. for 85 cents, and the fine pastry flour 44 oz. for 25 cents.

The results are summarized in the following table:

Table I. Pastry made with varying amounts of different fats to produce the same tenderness.

| FLOUR.          |         | FAT.                     |               | WATER.        | SALT.         | COST PER CUP. |               |               |
|-----------------|---------|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Kind.           | Weight. | Kind.                    | Weight.       | Weight.       | Weight.       | Flour.        | Fat.          | Total.        |
|                 |         | <i>Grams.</i>            | <i>Grams.</i> | <i>Grams.</i> | <i>Grams.</i> | <i>Cents.</i> | <i>Cents.</i> | <i>Cents.</i> |
| Bread ...       | 113     | Lard                     | 72            | 46            | 6             | 0.9           | 2.9           | 3.8           |
|                 |         | Butter                   | 85            | 50            | 4.5           | 0.9           | 7.1           | 8.0           |
|                 |         | Lard substitute          | 62            | 26            | 6             | 0.9           | 2.0           | 2.9           |
|                 |         | Butter + lard            | 79            | 35            | 5             | 0.9           | 5.1           | 6.0           |
|                 |         | Butter + lard substitute | 74            | 30            | 5             | 0.9           | 4.5           | 5.4           |
| Pastry ...      | 100     | Lard                     | 54            | 40            | 5             | 1.1           | 2.2           | 3.3           |
|                 |         | Butter                   | 64            | 48            | 4             | 1.1           | 5.3           | 6.4           |
|                 |         | Lard substitute          | 43.2          | 20            | 5             | 1.1           | 1.4           | 2.5           |
|                 |         | Butter + lard            | 59            | 27            | 4.5           | 1.1           | 3.7           | 4.8           |
|                 |         | Butter + lard substitute | 54            | 25            | 4.5           | 1.1           | 3.4           | 4.5           |
| Fancy<br>pastry | 100     | Lard                     | 54            | 40            | 5             | 2.0           | 2.2           | 4.2           |
|                 |         | Butter                   | 64            | 48            | 4             | 2.0           | 5.3           | 7.2           |
|                 |         | Lard substitute          | 43.2          | 20            | 5             | 2.0           | 1.4           | 3.4           |
|                 |         | Butter + lard            | 59            | 27            | 4.5           | 2.0           | 3.7           | 5.7           |
|                 |         | Butter + lard substitute | 54            | 25            | 4.5           | 2.0           | 3.4           | 5.4           |

#### METHODS OF MIXING.

A little work was done on the influence of different methods of combining. The same proportions were used but part of the fat was added by rolling it in successive portions into the paste. It seemed quite clearly indicated that by this method the paste is more flakey but less tender. This is to be expected since with the smaller amount of fat used in making the first paste a larger amount of water will be used and, as already shown, increasing the amount of water increases the toughness of the crust.

Experiments were also tried in which egg-white, or baking powder, or both, were added. The conclusion in regard to the former was that it increased the cost without adequate influence upon the quality of the crust. If baking powder is used the proportion of fat can be decreased without injuring the quality of the crust. However the crust did not keep well, acquiring a quite unpleasant taste within a day or so.

# METHODS OF TREATING THE LOWER CRUST OF A JUICY PIE TO PREVENT ITS BECOMING SOGGY.

The following methods were studied to see their influence upon the sogginess of the under crust of a juicy pie:

(1) The crust was spread with egg white; (2) the crust was sprinkled with flour; (3) the crust was sprinkled with corn starch; (4) the pie was put on the *bottom* of a very hot oven ( $300^{\circ}\text{C.}$ ) for 15 minutes, then the temperature lowered to  $240^{\circ}\text{C.}$ ; (5) the lower crust was baked 5 minutes and then filled; (6) pies were baked in granite plates, perforated tin, tin wire, and plain tin plates (the latter both new and old); (7) the top crust was washed with water before putting into the oven which was kept at  $300^{\circ}\text{C.}$ ; (8) the pie was put for 15 minutes on the bottom of an oven at a temperature of  $300^{\circ}\text{C.}$ , then removed to the upper shelf.

The following conclusions were reached:

(1) Egg white, flour and cornstarch serve to prevent sogginess to some extent.

(2) Pies baked in a granite plate are most browned on the bottom, those in an *old* tinplate are second, while the perforated and wire tins are next in order.

(3) The *best* way to bake a juicy pie is in a *granite plate*, placing it on the *bottom* of an oven at  $300^{\circ}\text{C.}$  for 15 minutes, then removing it to the upper shelf to finish baking.

While the results herein reported, owing to the limited amount of data, will only permit one to draw tentative conclusions, they do serve to give much more definite information than we have had heretofore.

This report illustrates the methods which we are using at the University of Chicago to study the ordinary cooking processes which have been so largely controlled by rule-of-thumb methods. Similar studies have been made upon the making of bread, biscuits, cake, and doughnuts; upon factors influencing the efficiency of freezing mixtures; upon the amount and kinds of ingredients desirable in gelatin desserts, etc. By these means we not only acquire very desirable information but we also train the students in methods of research and in the compilation and interpretation of data, and give them valuable training in technique. It is a frequent criticism of college courses that students are not given an opportunity to acquire technical skill. It is impossible to undertake the study of a problem of this nature of any length without considerably increasing this type of ability.



## THE PRESERVATIVE ACTION OF SPICES.

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During recent years there has been a good deal of discussion and legislation on food preservatives. Sodium benzoate has been of particular interest because some experts maintain that it is not harmful to the human system when used in quantities that will prevent the growth of micro-organisms in food, whereas others ascribe injurious properties to it, and strongly condemn its use. Whatever may be the merits of this controversy, the fact remains that many people prefer not to eat food containing sodium benzoate. At this time, therefore, it is interesting to consider the preserving properties of various articles which we commonly use in our food.

It is a matter of common knowledge that fruits or vegetables prepared with the addition of spices and vinegar keep longer without being carefully sealed than do those same fruits or vegetables put up alone or with only ordinary amounts of sugar. Unsealed pickles and ketchups will keep for a long time without the growth of micro-organisms. Cakes containing spices are also known to keep longer than other cakes. Fruit cake, which always contains spices, is often made several weeks before using, since its quality is said to improve with age. Although it is known in a general way that spices have something to do with the keeping of food to which they have been added, yet they have never been used with the primary idea of exerting a preservative effect. The spices are added rather on account of the flavor which they impart, and it is only a lucky coincidence that they also help to keep the food from spoiling. When spices are used in food, several kinds are almost always added together, and usually the cooking is done in a liquid which contains more or less vinegar. It is common to add to pickles and ketchups, especially, as many as six or eight kinds of spices. Just which of the spices have any value in preserving the food, is not generally known.

All condiments are irritating to the mucous membrane, and are injurious when used in excessive amounts. Their use, then, must be limited. Hence every housewife should know just which of the condiments she adds in her cooking will help to preserve the food, and which of them are of no value except for their flavor, so that she can regulate her use of them accordingly. As it will be seen in the tables below, some of the most irritating spices have no value whatever as preservatives.

Vinegar in sufficiently high concentration prevents the growth of micro-organisms, and must be considered an important preservative. In a single test made by us, 100 cc. of vinegar was added to 100 grams of apple sauce. The mixture was boiled over a flame until the volume was again reduced to 100 cc., when it was exposed to the air for a few days and then stoppered to prevent evaporation. The sauce has not spoiled after  $4\frac{1}{2}$  months. In much less concentration the vinegar would no doubt retard growth.

A few experiments were carried out under conditions that would pertain in any kitchen to compare the preserving properties of various spices, and to determine the amounts of them which will prevent all growth of micro-organisms. Apple sauce to which a small amount of sugar had been added was used in all of the tests except those on ginger, black pepper, and cayenne pepper recorded in Table I where cabbage was used. In every case the given amount of spice was mixed with 100 grams of the cooked material in small Erlenmeyer flasks. After adding the spice the flasks were placed in the steam sterilizer and steamed for thirty minutes. When removed from the sterilizer they were left open in the laboratory for a few days to receive contamination from the air and then closed with cork stoppers to prevent evaporation. The figures in the tables show the number of days after being put up when growth was first observed in the flasks. It was assumed that the growth of yeasts, molds, or bacteria would change the appearance or odor of the sauce, and no further tests for growth were made. In every case it was the molds which first made their appearance. The flasks were not examined between the sixtieth and one-hundredth days, so that the exact time of the spoilage of the apple sauce containing allspice in three of the flasks is not known. The tests recorded in Table I were preliminary, and the results served to suggest the amounts of spices to be used in later experiments.

Table I.—Time of spoilage of food containing varying amounts of spices.

| AMOUNT OF SPICE. | CONTROL. | NUTMEG. | CINNAMON.                   | ALLSPICE. | CLOVES.                     | GINGER. | BLACK PEPPER. | CAYENNE PEPPER. | MUSTARD.                   |
|------------------|----------|---------|-----------------------------|-----------|-----------------------------|---------|---------------|-----------------|----------------------------|
| Grams.           | Days.    | Days.   |                             | Days.     |                             | Days.   | Days.         | Days.           |                            |
| 0                | 4        |         |                             |           |                             |         |               |                 |                            |
| 2.5              |          | 5       | } No spoilage in 14 months. | 16        | } No spoilage in 14 months. | 5       | 4             | 4               | } No spoilage in 14 months |
| 5                |          | 6       |                             | 60        |                             | 5       | 4             | 4               |                            |
| 7.5              |          | 7       |                             | 100       |                             | 5       | 4             | 4               |                            |
| 10               |          | 16      |                             |           |                             | 5       | 4             | 4               |                            |
| 15               |          | 27      |                             | 195       |                             | 5       | 4             | 4               |                            |

From Table I it appears that ginger, black pepper, and cayenne pepper do not prevent the growth of micro-organisms, but that cinnamon, cloves, and mustard are valuable preservatives and that nutmeg and allspice delay growth.

Further experiments were carried out to determine more accurately the amounts that will prevent growth. Flasks were again put up with ginger, black pepper, and cayenne pepper in large amounts. The results are given in Table II, as follows:

Table II.—Time of spoilage of apple sauce containing varying amounts of spices.

| AMOUNT OF SPICE. | CONTROL. | GINGER. | BLACK PEPPER. | CAYENNE PEPPER. |
|------------------|----------|---------|---------------|-----------------|
| Grams.           | Days.    | Days.   | Days.         | Days.           |
| 0                | 4        |         |               |                 |
| 15               |          | 6       |               | 7               |
| 20               |          | 8       | 6             | 7               |
| 30               |          | 7       | 6             | 6               |

Even where the large amounts of 30 grams of spice to 100 grams of apple sauce were used growth took place only two or three days later than in the control flask. Bitting<sup>1</sup> reports that molds will grow in a few days on a paste made of these ground spices mixed with water. It is obvious, then, that ginger, black pepper, and cayenne pepper can be of no value as preservatives in the small proportions in which they are used in cooking.

The effect of cinnamon, cloves, mustard, allspice, and nutmeg in small amounts was tested in another experiment. The results are given in Table III:

<sup>1</sup>U. S. Dept. Agriculture, Bureau Chemistry Bull. 119. Experiments on the Spoilage of Tomato Ketchup.

Table III.—Time of spoilage of apple sauce preserved with spices.

| AMOUNT<br>OF<br>SPICE. | CONTROL. | CINNAMON.                  | CLOVES.                       | MUSTARD.                      | ALLSPICE. | NUTMEG. |
|------------------------|----------|----------------------------|-------------------------------|-------------------------------|-----------|---------|
| Grams.                 | Days.    | Days.                      | Days.                         | Days.                         | Days.     | Days.   |
| 0                      | 9        |                            |                               |                               |           |         |
| 0.25                   |          | 9                          | 15                            |                               |           |         |
| 0.5                    |          | 30                         | 15                            | 115                           | 9         |         |
| 1                      |          | 84                         | 74                            | 60                            | 9         | 9       |
| 1.5                    |          | 84                         | Not<br>spoiled in<br>8 months |                               |           |         |
| 2                      |          | Not spoiled<br>in 8 months |                               | Not<br>spoiled in 8<br>months | 9         |         |
| 2.5                    |          |                            |                               |                               | 16        | 9       |
| 5                      |          |                            |                               |                               | 9         | 9       |
| 7.5                    |          |                            |                               |                               |           | 9       |
| 10                     |          |                            |                               |                               |           | 10      |

Allspice in the proportion of 5 grams of spice to 100 grams of sauce did not have even a retarding effect, although the flask containing 2.5 grams kept sixteen days, whereas the control flask kept nine days. Nutmeg in the proportion of 10 grams to 100 grams of sauce delayed growth only one day. Hence these spices also cannot be considered of practical value as antiseptics.

Cinnamon, cloves, and mustard are about equal in their efficiency. The flask containing 0.5 gram of mustard kept for almost four months; the flask containing 1 gram kept two months; and the flasks containing 2, 2.5, and 5 grams were still keeping, eight months after having been put up. The flask containing 0.5 gram of cinnamon kept one month; the flasks containing 1 and 1.5 grams kept almost three months, and the flask containing 2 grams is still keeping. Cloves in the proportion of 0.25 gram to 100 grams of sauce delayed growth for several days; the flask containing 1 gram kept for 2½ months; and the flasks containing 1.5 and 2 grams are still keeping.

The three spices cinnamon, mustard, and cloves, must then be considered important preservatives. Cinnamon and mustard are particularly valuable, for they are palatable even when used in proportions that prevent all growth. Cloves in the proportion which prevented growth (1.5 grams to 100 grams of sauce) had too much of a burning taste to be palatable. However, they retard growth in much smaller amounts.

The active antiseptic constituents of mustard, cinnamon, and cloves



are their aromatic or *essential* oils, as they are termed. Clove buds yield about 15 per cent of essential oils, of which the greatest part is eugenol, or oil of cloves. Cinnamon bark yields from 0.5 to 1 per cent of essential oils. About 70 per cent of this is cinnamic aldehyde, which gives to cinnamon its characteristic odor. The essential oil of cinnamon also contains from 4 to 8 per cent of eugenol and some other aromatic compounds in smaller amounts.

The much smaller yield of the essential oil from cinnamon bark as compared with that from clove buds is compensated by its much greater antiseptic properties, which are brought out in Table IV. These tests also were made with apple sauce.

Table IV.—Time of spoilage of apple sauce preserved with essential oils.

| AMOUNT OF OIL. | CONTROL.     | CINNAMIC ALDEHYDE.       | EUGENOL.                 |
|----------------|--------------|--------------------------|--------------------------|
| <i>Grams.</i>  | <i>Days.</i> | <i>Days.</i>             | <i>Days.</i>             |
| <i>Test A.</i> |              |                          |                          |
| 0.026          | 3            | 80                       | 6                        |
| 0.052          |              | 120                      | 12                       |
| 0.105          |              | Not spoiled in 14 months | Not spoiled in 14 months |
| 0.157          |              |                          |                          |
| 0.21           |              |                          |                          |
| <i>Test B.</i> |              |                          |                          |
| 0.0            | 9            | 60                       |                          |
| 0.013          |              |                          | 9                        |
| 0.026          |              |                          | 13                       |
| 0.052          |              | Not spoiled in 8 months  | 9                        |
| 0.105          |              |                          | Not spoiled in 8 months  |

Cinnamic aldehyde even in the smallest proportion used—a little over 0.01 gram to 100 grams of sauce—delayed growth to sixty days, and in double this amount prevented growth entirely in the second set of flasks. As in the case of the cinnamon from which it is derived, cinnamic aldehyde is palatable in proportions which will preserve food.

It required considerably higher proportions of eugenol for complete preservation. In both tests 0.105 gram of eugenol to 100 grams of sauce prevented all growth. This amount gives too much of a burning taste to be palatable, which is in agreement with the results obtained with cloves. One-half of this amount delayed growth somewhat, and did not give too strong a flavor. The essential oils of both cinnamon and cloves, however, lack much of the good flavor of the spices.

In continuation of the above work, it was thought advisable, in view of the present controversy relative to the manufacture of ketchups and the use of preservatives therein, to examine various ketchups as to the types of organisms present. Spices are extensively used in the manufacture of ketchup and in many commercial brands sodium benzoate is employed as a preservative. The use of sugar also has been adopted as aiding the keeping qualities of ketchups.

Accordingly any organisms which could grow in such a medium would be more or less of a resistant type and a critical and crucial test of the preservative action of various substances could be made upon them. In previous work these substances had been added to the medium and the latter then exposed to natural contamination. The work reported below was performed on pure cultures of organisms isolated from ketchups which were undergoing spoilage, the method adopted for this work being analogous to that employed in testing the strengths of disinfectants.

On examining various ketchups, the predominant type of organism usually found proved to be yeasts, presumably several of the wild species. These undoubtedly find a favorable medium in ketchup, particularly that containing sugar, which they ferment with evolution of carbon dioxide, this resulting in the characteristic gassy fermentation of many of the spoiled ketchups. Of the bottles examined several were so charged with carbon dioxide that on opening, the contents were blown out of the bottle in all directions with explosive force. Besides yeasts several organisms of the bacillar type were isolated, and in several bottles of ketchup which had been bottled cold an organism identical in most respects to the ordinary lactic acid bacterium was found. A large spore-forming bacillus was isolated from one of the heated ketchups. The predominant flora throughout, however, proved to be yeasts.

After preliminary isolation of these various organisms on an acidified tomato-broth agar, replating and re-isolation were performed to insure purity of the cultures. No attempt was made to identify these various organisms by detailed study. They were employed directly to test out the preservative action of cinnamic aldehyde, eugenol, and benzoic acid, respectively. Numerous difficulties were here encountered before a suitable medium and a satisfactory method were devised. The medium finally adopted was a tomato broth bouillon containing 1 per cent sugar and adjusted to 1.5 per cent normal acid. But even with this medium, which gave good growth, it was difficult

to test out the action of the various substances above mentioned, owing to the fact that their addition even in minute quantities occasioned a more or less pronounced turbidity which was with difficulty differentiated from that produced by bacterial growth. In several cases it was necessary to make microscopical examinations in order to ascertain whether or not growth had occurred.

Suspensions of the respective organisms were prepared by inoculating tubes of the tomato bouillon and incubating until turbidity had occurred, which usually required forty-eight hours. After thorough shaking one loopful of these cultures was transferred to tubes containing 5 cc. of sterile broth. To these were then added varying amounts of cinnamic aldehyde, eugenol, and benzoic acid, respectively, equivalent to 1, 2, 5, and 10 parts per 10,000 parts of inoculated bouillon. Two tubes of each organism with each of the varying amounts of the different preservatives were prepared. All tubes were incubated at 37° C. and examined daily for three days. The results secured are recorded in Table V.

Table V.—Influence of preservatives indicated upon growth of certain organisms.

| ORGANISM<br>EMPLOYED.       | CINNAMIC ALDEHYDE. |           |           |           |            | EUGENOL.   |           |           |           |            | BENZOIC ACID. |           |           |            |            |
|-----------------------------|--------------------|-----------|-----------|-----------|------------|------------|-----------|-----------|-----------|------------|---------------|-----------|-----------|------------|------------|
|                             | 5:100,000.         | 1:10,000. | 2:10,000. | 5:10,000. | 10:10,000. | 5:100,000. | 1:10,000. | 2:10,000. | 5:10,000. | 10:10,000. | 1:10,000.     | 2:10,000. | 5:10,000. | 10:10,000. | 20:10,000. |
| 23d spore-formers.....      |                    | +         | —         | —         | —          |            | +         | ±         | —         | —          | +             | +         | +         | —          |            |
|                             |                    | +         | —         | —         | —          |            | +         | +         | —         | —          | +             | +         | +         | ±          |            |
|                             |                    | +         | ±         | —         | —          |            | +         | +         | ±         | —          | +             | +         | +         | +          |            |
| 5X yeast.....               |                    | —         | —         | —         | —          |            | —         | —         | —         | —          | +             | —         | —         | —          |            |
|                             |                    | —         | —         | —         | —          |            | —         | —         | —         | —          | +             | —         | —         | —          |            |
|                             |                    | —         | —         | —         | —          |            | —         | —         | —         | +          | —             | —         | —         | —          |            |
| 23y bacillus (spore-former) | +                  | ±         | —         | ±         | —          | +          | +         | +         | —         |            |               |           |           | —          | —          |
| 23d bacillus (spore-former) | +                  | +         | ±         | ±         |            | +          | +         | +         | —         |            |               |           |           | +          | ±          |
| 23e blunt bacillus.....     | +                  | +         | —         | —         |            | +          | +         | +         | +         |            |               |           |           | +          | +          |
| 5n yeast.....               | +                  | ±         | —         | —         |            | +          | +         | +         | —         |            |               |           |           | +          | +          |
| 27a yeast.....              | +                  | +         | +         | +         |            | +          | +         | +         | ±         |            |               |           |           | +          | +          |
| 5b yeast.....               | +                  | ±         | —         | —         |            | +          | +         | +         | —         |            |               |           |           | +          | ±          |
| 5d yeast.....               | +                  | ±         | —         | —         |            | +          | +         | +         | +         |            |               |           |           | +          | ±          |
| 23g bacillus in chains..... | +                  | +         | +         | +         |            | +          | +         | +         | +         |            |               |           |           | +          | +          |

From the data submitted it is at once apparent that cinnamic aldehyde possesses a more marked antiseptic action than either eugenol

or benzoic acid. Of the two latter, benzoic acid appears to be by far the least effective as a preservative. In case of cinnamic aldehyde a concentration of 2 parts per 10,000 was sufficient to inhibit the growth of most organisms, only 3 out of the nine employed showing growth at this concentration. With eugenol 5 parts per 10,000 proved insufficient to prevent the growth of all the organisms tried, five out of nine having grown. Benzoic acid on the other hand revealed a much weaker antiseptic action than either of the above, eight forms out of nine growing in a concentration equivalent to 10 parts per 10,000, and five out of nine in a concentration of 20 parts per 10,000, while three others showed doubtful evidence of growth.

In view of the fact that this work on pure cultures was performed by one of the authors, whereas the work on the apple sauce was performed independently by the other, it is interesting to note that the results in both cases coincide remarkably. For direct contamination of the specially prepared apple sauce, it was found that 0.01 gram of cinnamic aldehyde per 100 grams of sauce (equivalent to 1 part per 10,000) was sufficient to delay growth at least 60 days and that 2 parts per 10,000 prevented all growth, results with which the data in Table V correspond very closely. With eugenol the same remarkable correspondence maintains, the results of both observers showing that 10 parts per 10,000 were sufficient to inhibit growth. Thus, both methods, the more practical household method of direct exposure to contamination and the laboratory pure-culture method, yielded results identical in all respects.

In view of the above, it appears that cinnamic aldehyde and eugenol as such possess considerable preservative action and aid materially in preserving substances to which they are added. As both are contained in such spices as cinnamon and cloves, no doubt the marked preservative action of these spices, as shown in the above experiments must be attributed to their content of these essential oils. As this preservative action takes place, even when the spices are used in the small quantities necessary for flavoring, may not their use be recommended in contrast to such spices as pepper and ginger, which have been shown to possess but little, if any, preservative action? The possibility of the more liberal use of cinnamon and cloves in the preparation of ketchup is also of interest because of its bearing on the use of preservatives in such materials, concerning which there has been so much discussion.



## STRENGTH OF FLOURS.<sup>1</sup>

FRANCES FREEMAN.

Strength according to Humphries and Biffen is "the capacity for making large well-piled loaves," meaning by this, size and shape. T. B. Wood also gives the primary factor as size of the loaf, the other factors being shape, and perhaps to a slight extent texture. The old idea was that strength was due to gluten which because of its tenacity held in the bread the carbon dioxide evolved by the yeast. Some investigators suggest that strength depends upon the ratio of gliadin to glutenin. However, Wood concludes that neither percentage of total nitrogen nor of gliadin in the flour, nor the ratio of gliadin to glutenin can be taken as an absolute measure indicating strength in flour.

Wood's theory is that the largeness of the loaf depends chiefly upon the power of flour to give off gas fermented with yeast, and the suggestion is made that shapeliness and probably gas retention are dependent upon the physical properties of the gluten as modified by the presence of the varying proportions of salts. The properties of gluten which vary with concentration of acid and salt are coherence, elasticity, and water content, and it is suggested that these properties have an important bearing on the shape of the loaf.

Snyder concludes that to produce bread of the best properties, and to have a well-balanced gluten capable of expansion, it must be composed of approximately 65 per cent of gliadin and 35 per cent of glutenin.

With these two theories as a basis for work, determinations in eight samples were made of total nitrogen, water- and salt-soluble nitrogen, glutenin, and gliadin, according to the methods used by Snyder. The soluble carbohydrates dextrose and sucrose were determined by use of Alihn's modification of Fehling's solution. Carbon dioxide was estimated by collecting the gas evolved by the flour fermented by

<sup>1</sup> This paper and the one following represent joint graduate work at the Ohio State University. They were presented at the St. Louis Meeting, December, 1810, of the American Home Economics Association.

yeast for a period of 16 hours. Total acidity was found by titration with tenth-normal sodium hydroxid.

The soluble salts were determined by measuring their electrical resistance in ohms, the post-office box form of Wheatstone bridge, Kohlrausch cell, being used.

With the exception of one flour the proportion of glutenin to gliadin was 43:56. Although this does not agree with Snyder's proportion for good flour, excellent bread of good shape and size was made from some of the samples, but poor bread of good shape and small size was obtained from others. Durum flour—with the proportion of gluten to gliadin 36:63—made the smallest loaf, though it agreed almost exactly with Snyder's proportion. This flour also contained the highest percentage of soluble carbohydrates and gave a high carbon dioxide evolution. Since it made the smallest loaf, this also does not bear out Wood's theory.

No definite agreement was found between the size of the loaf, the carbon dioxide involved, and the total soluble carbohydrates. The only comparison observed was that the two flours giving the smallest loaves and best shape contained also the smallest amounts of water-soluble nitrogen, which may be only a coincidence. No relation could be seen between the total acidity and soluble salts and the shape and size of the loaf.

The size may depend upon some property of the gluten for retaining the gas evolved.

## EXPERIMENTAL WORK WITH WINTER AND SPRING WHEAT FLOURS.

IDA SHILLING.

The value of flour to the baker, according to Wood, depends upon at least four distinct properties: (a) The volume of the loaf given quantity will produce, which may vary more than 30 per cent; (b) the amount of water which a given quantity will absorb in making a dough of the proper consistency for baking, which may vary from one-half to three quarters of its own weight; (c) the shape of the loaf; and (d) the texture and color of the bread.

Some studies of the relative qualities of different sorts of flour have been made recently at the Ohio State University as a part of graduate work, and are here briefly reported. The samples of spring wheat

flour used included two commercial brands (A) and (B) and a second grade durum. The winter wheat flours included five commercial brands, designated as (C), (D), (E), (F) and (G).

The simplest possible recipe and the quick-process method were used. For scoring the flour 425 gms. were taken as a standard. The remaining ingredients weighed as follows: 5.5 grams salt; 12.5 grams lard; and 12.5 grams sugar. The yeast was soaked in a measured amount of water and 35 cc. of this mixture, the equivalent of one cake, was used for each loaf.

The amount of water used for each flour was determined by the baker's sponge test. This also gave the theoretical volume.

Each loaf was made separately. Weighed amounts of salt, sugar, and lard were placed in mixing bowls. The determined amount of boiling water, minus 35 cc., was then added. This mixture was allowed to cool until luke-warm when the yeast was put in. The flour was thoroughly worked in by means of a spatula, special care being taken not to lose any. It was then kneaded in the bowl for ten minutes, and was allowed to rise until it doubled in volume, when it was placed in a greased pan without kneading and again allowed to rise until the volume doubled.

By experiment it was found that a second kneading had no effect on size and shape. The temperatures worked out were 240° C. the first 15 minutes; 220° C. the second 15 minutes; and 200° C. the third 15 minutes.

The volume was determined by displacement in sugar. Each loaf was first weighed and then measured. The bread was also judged as to shape, color, texture, and flavor.

Only one sample (durum) gave Snyder's ratio (36:63). This also contained 8.6 per cent of soluble carbohydrates, more than any other sample. It made the smallest loaf, but had a most excellent shape. Therefore in this case, neither Wood's nor Snyder's theories hold good.

Commercial brands (A), (E), and (B) each made large loaves of good shape, with a proportion of glutenin to gliadin of 42:58. Brand (C) made a large loaf but lop-sided in shape, the proportion here also being 42:58. The others had the same proportion, good shape, and large loaves.

It was found that excellent bread of good shape and good size could be made from some of the samples, and that poor bread of good shape and small size obtained from others.

This year it was suggested that perhaps the amount of yeast used for a loaf of bread influenced the size and shape of the loaf, but experiments seem to show that neither a small nor a large amount of yeast had any effect on the size and shape.

A series of experiments has been started to show the effect of the absence of salt, or sugar, or both, on size and shape. No conclusions can as yet be drawn. All these experiments must be tried, using all the other samples also.

It is suggested that for other work there be made an analysis of samples to determine the kind of salt or acid present and their effect on the proteid of the flour. The proportion of salts to total proteid should also be determined.



## A COÖPERATIVE KITCHEN.

BLANCHE McNERNEY.

In Carthage, Missouri, there was an energetic woman; there was the approaching heat of summer; and there was the anticipation of many pleasures cut short by the ever-present problem of keeping peace in the family by having meals on time. The energetic woman suggested to her friends of the neighborhood that they try an experiment. She proposed the "coöperative kitchen" as an agreeable and easy way of solving the food and servant question for the summer months.

The plan evolved and tried with success was as follows: A vacant house in the neighborhood was rented for four months, and a woman of ability found who would act as general manager and overseer of the servants. The house was a large, cheerful, old fashioned, colonial house with a huge yard filled with large oak shade trees, and with a very attractive veranda on two sides. The attractiveness of this spot increased the pleasure of those who might arrive before the meals, or of any who wished to remain afterward.

The whole first floor was given over to the dining room and kitchen. The second floor furnished quarters for the manager and her family, while the third floor was devoted to servant's quarters. Later, when it was made sure that the plan was to succeed, and the "kitchen" was to continue through the winter months, the extra rooms were rented to school teachers. This, of course, was a great accommodation to the teachers and a great help to the prosperity of the "kitchen."

The original plan had been to include only the families within a radius of a block, but as time passed and the success of the scheme was assured, some bachelors and teachers applied for places. Although the house was located some blocks from the business section, it was very convenient to the car-line.

Each family having membership in this "kitchen" was to furnish its own table, table linen, silver, and any delicacies, such as preserves, jellies, etc., which give the meal an individual and homelike character. The rooms were large and the distance between the tables was sufficient to insure privacy of conversation if the voices were kept com-

paratively low. The bachelor's table was fitted out by the manager—the men gladly paying for the necessary equipment.

It is not so difficult a matter to keep servants in such an establishment as in a private home, since the wages are good, there are several servants, and no chance for lonesomeness, and, although the hours may be long, every servant has two hours a day off duty, and a half day every other week. There are two cooks, a head cook and her assistant, a dishwasher, and the waitresses who belong to the regular corps of the "kitchen." On alternate Sunday afternoons the waitresses are given a vacation and the children are allowed to assist the manager in serving the lunch for that evening.

The manager is a woman of much ability who understands the scientific value of food. She prepares the menu, purchases the groceries, buying them in large quantities which of course lessens the price, and with the assistance of a board, composed of members of the "kitchen," attends to the financial problems of the establishment.

The scheme of these Carthaginians is, perhaps, not entirely practical for those families with small children, unless the baby can be left with the nurse while the mother is gone. The nurse under such circumstances may take her meal later.

The "kitchen" has now been in working order for two years. The summer months are by far the most prosperous. Of late, the membership has been decreasing, due, perhaps, to the home instinct which prevails in most men. A business man usually prefers the quiet seclusion of the family dining room, and the more delicate dishes prepared to please him, to the large room with many tables and the comparatively unappetizing dishes prepared in large quantities. The first evil could be done away with by renting a whole dining-room, but the people who have this "kitchen" in charge are of moderate means and one object in the plan was to lessen expense. In such a place as the "kitchen," however, the greatest amount of skill and the most careful supervision will not suffice to keep down the gradual tendency toward the *regular boarding-house* style.

The financial side of the problem has worked out in a manner entirely satisfactory to all concerned. Each adult member pays \$3.50 a week, and a half price rate is given to children between two and seven years of age, and to family servants who do not require service. The following table of incomes and expenses for January, 1910, will furnish a very good idea of the finances. This month was an exceedingly trying one and expenses and incomes barely balance.

*\*Income and Expenses, January.*

| Income.                        |          | Outgo.                       |          |
|--------------------------------|----------|------------------------------|----------|
| Membership dues.....           | \$700.00 | Servants.....                | \$134.00 |
| Rent for two rooms.....        | 15.00    | Manager's salary.....        | 35.00    |
| Guests at \$0.25 per meal..... | 80.00    | Rent.....                    | 40.00    |
|                                |          | Light, heat, ice.....        | 38.00    |
|                                |          | Two telephones.....          | 3.50     |
|                                |          | Meat.....                    | 163.00   |
|                                |          | Milk and cream.....          | 64.00    |
|                                |          | Groceries.....               | 307.50   |
|                                |          | Incidentals.....             | 5.75     |
|                                |          | Cash on hand, February 1.... | 4.25     |
|                                | <hr/>    |                              | <hr/>    |
|                                | \$795.00 |                              | \$795.00 |

\* I am indebted to an article by Mrs. Blair in the *World's Work*.

## A QUIET FACTORY LUNCH ROOM.

ETHEL R. PEYSER.

*Associate Editor of "Good Housekeeping."*

It will be gratifying to many to know that in New York City a lunch room has been recently opened, devoted to the *quiet* and comfort of the employes of the factory with which it is connected.

The Electrical Testing Laboratories on Eightieth Street and East End Avenue have given a large hall for dining room purposes. The management of this hall is under the direction of Mrs. Root, a New York woman who is devoting herself to the administration of factory lunch rooms on a scientific and practical basis. This room is about 80 feet long by 14 feet wide, and is divided in the middle by an improvised wooden kitchen about 10 by 26 feet, with serving windows at each end (so that both halves of the dining room may be served simultaneously). It has a door leading into the passage-way which is on one side of the room and which permits of egress at either end. The women employes are seated in that part of the room nearest the exit and the men are placed at the further side beyond the kitchen, the men and not the girls having to take the longer walk. This is but one of the many evidences of the thoughtful management which has assured the success of this undertaking.

There are two rows of eight tables in each division of the room, with chairs for five persons each, one end of each table being drawn close to the wall. The tables are rectangular, of polished golden oak,

and are furnished with plated silver, glassware of good quality, bottles of tomato catchup, Worcestershire sauce, bread, butter, a water bottle, and paper napkins.

The employes have 30 minutes for lunch and are served in two 30-minute relays. Generally 80 people and sometimes more use the room, so that 40 people, 20 in each part of the hall, are waited upon at the same time and served noiselessly and with clockwork precision with the regular dinner in less than 15 minutes by but two waitresses, while Mrs. Root and her assistant remain in the kitchen. The question naturally arises: How can this work be done so *quietly* and so *quickly*? How are noise and confusion eliminated? The answer is this: There is no long bothersome menu hanging on a remote wall to be studied by a crowd of hungry workers. Each employe has a regular seat assigned to which he unhurriedly goes. One plate containing the roast and vegetable is promptly placed before each one and a choice is given of beverage and dessert. This arrangement necessitates but two trips for the waitress who does her work noiselessly and rapidly on rubber heels. What is looked upon in this room as the greatest of faults is the clattering of dishes and this always provokes the condemnation of Mrs. Root.

It is, therefore, very nearly like a home dining-room except that there is a choice of three desserts (stewed prunes always being the available third choice). And it is furthermore like a home meal because any one can have a dairy lunch consisting of a bowl of milk with bread and butter, instead of the roast and vegetable. The restful quiet can not be overestimated and is as much appreciated as is the daily menu and its careful preparation. The director does all the cooking with the assistance of one helper, and the men are especially appreciative of the excellent pies, cakes, and bread. Below is a week's menu which is quite typical, except that soup is added in the winter.

*Monday.*—Bread, butter, roast beef, baked potatoes; blackberry or custard pie, or prunes; tea, coffee, milk, or cocoa.

*Tuesday.*—Bread, butter, meat stew; boiled rice, fruit jelly, bananas, or prunes; tea, coffee, milk, or cocoa.

*Wednesday.*—Bread, butter, roast lamb, baked potatoes; strawberries, bananas, or prunes; tea, coffee, milk, or cocoa.

*Thursday.*—Bread, butter, roast veal (with dressing) boiled potatoes in jackets; chocolate pudding with cream, preserved peaches, or prunes; tea, coffee, milk, or cocoa.



*Friday*.—Bread, butter, fried cod, baked potatoes; ice cream, preserves, or stewed prunes; tea, coffee, milk, or cocoa.

No meal is served on Saturday as the factory closes at noon.

This tabulation speaks for itself. In regard to dietary values and general attractiveness a nice balance is maintained and meets with the approval of all.

Chicken and turkey are sometimes served when market conditions permit.

The kitchen is very small but it has the advantage of saving unnecessary steps. It is managed according to thorough scientific, economic, and hygienic methods. Towels and dishes, in fact all utensils, are sterilized, dust traps are much in evidence, and the latest labor-saving devices (electric ice cream freezers, etc.) are employed.

At the last Lake Placid Conference of the American Home Economics Association, Mrs. Dewey said, "Food served 10 minutes from the fire to the table is often spoiled. To come promptly to meals at a fixed hour not only insures food at its best but also preserves family life. To have perfect food one must eat in the kitchen." The first condition stated by Mrs. Dewey, that of "promptness," is fulfilled in this factory by calling the employes by a system of telephone signals.

The second condition, that of perfect or hot food, is fulfilled by the location of the kitchen in the very centre of the dining room.

The following notice is very indicative of the courtesy and the regard shown throughout the factory and lunch room, the authorities actually assuming the rôle of the "gracious host."

#### NOTICE.

Because of the poor and inadequate lunch facilities available in this neighborhood, which results in a great deal of time being wasted, the Company has arranged to serve a simple plain lunch to all its regular, permanent employes.

On and after January 13, 1910, lunch will be served in the rooms provided for the purpose, on the southern side of the building. In a general way lunch will be served in the two departments separately as follows:

Photometrical Department and Mechanical Force... 12.30 to 1.00 p.m.

General Testing Department and Office..... 12.45 to 1.15 p.m.

The lunch period will therefore be strictly one-half hour long, and the hours for all employes will be as follows:

8.57 a.m. to 12.30 or 12.45 p.m.

1.00 or 1.15 p.m. to 5 p.m.

Employes who prefer to obtain their lunch elsewhere are of course at liberty to do so, but only 30 minutes will be allowed for that purpose.

Each employe will have a seat assigned to himself or herself. It is requested that each person always use the same seat.

It is hoped that all employes will appreciate the fact that they will virtually be *guests* of the Company and that the social proprieties usually observed under such circumstances will not be forgotten.

When the lunch room was first started in this building the meals were given absolutely free of charge to all regular employes. The director received 25 cents per capita per diem, and was (and is now) guaranteed 70 "guests." In June, 1911, when Mrs. Root's administration was just gaining permanence, she was cut down to 20 cents per capita per diem, as the company found that their expense was too great. At the same time each employe was requested to pay 50 cents a week (equivalent to 10 cents daily), the factory still assuming the larger outlay.

Naturally when a thing is given away the recipients are little prone to be dissatisfied, and while this condition existed every thing went well, but when the change was instituted involving the taxing of the employes and the diminishing of the director's allowance it was not a little disconcerting. However, and this certainly speaks more strongly than words for the quality and kind of food and service, the satisfaction has been just as great and there has been an increase rather than a decrease in the patronage of the dining-room. In fact the officers and manager of the factory are among the well-pleased patrons.

Mrs. Root is particularly skillful in the way she prepares food, and her knowledge, not only of dietetics but of the needs of the tired worker, has caused her to be looked upon by employer and employed as a real God-send.

Would that this sort of work might be done in *all* factories! But the secret of success lies in what Mrs. Root said to the writer of this article, "I am not doing this primarily for money, as I earn little more than a stenographer's wage, but my object is really to help my brothers and sisters."

She has proved, too, what can be done with a small force of assistants, in a small area, in a small space of time, with a small allowance.

## A SCORE CARD FOR EATING HOUSES.

The following score card for eating houses is the work of a class<sup>1</sup> in the department of household science in the University of Illinois which is studying special problems in the service of food. While some of the points listed as being discredits may seem to be stated somewhat baldly, a critical patronage of most of the cheaper eating places, and many of those not so cheap, will probably serve to justify the suggestions here offered.

### SCORE CARD.

POINTS.

- |     |                                                                                                                                                                                                       |         |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| I   | Building or Plant.                                                                                                                                                                                    | POINTS. |
|     | Accessibly located; wholesome neighborhood; building in sanitary condition; well lighted and ventilated. . . . .                                                                                      | 20      |
|     | Discredit;                                                                                                                                                                                            |         |
|     | Proximity to stable; laundry, renovating plants, etc. Dilapidation; absorbent walls, etc. Presence of flies; cockroaches; mice, etc. Direct communication with toilet room. All day artificial light. |         |
| II  | Character of working force and conduct of business. . . . .                                                                                                                                           | 20      |
|     | Discredit:                                                                                                                                                                                            |         |
|     | Discourtesy; slovenliness; incompetence; dishonesty, etc. Bad health; evidence of skin disease, tuberculosis, etc. Acting as agents for laundries, clothing renovators, etc.                          |         |
| III | Reception and general treatment of guests. . . . .                                                                                                                                                    | 5       |
|     | Discredit:                                                                                                                                                                                            |         |
|     | Lack of cloak-room facilities.                                                                                                                                                                        |         |
|     | Lack of promptness in assigning places at table.                                                                                                                                                      |         |
| IV  | Conveniently located tables; comfortable chairs; clean linen; attractive china; good silver; and well arranged table. . .                                                                             | 10      |

<sup>1</sup> 14. SPECIAL PROBLEMS IN CONNECTION WITH THE SERVICE OF FOOD.—This course deals with the problems of marketing, domestic storage, management of menus, and utilization of waste food materials, as modified by special conditions. Assistant Professor VAN METER.

## Discredit:

Tables crowded together; lack of separate tables for individuals and small parties.

Clumsy china and worn plated ware.

Napkins in drinking glasses.

Array of "relishes" left on table.

## V Food:

Good quality; well prepared; reasonable variety; good combination, flavor and amount. . . . . 35

## Discredit:

Cold or luke-warm dishes that should be served hot.

Half-melted desserts, soft butter, and wilted salads.

Undue number of side dishes.

Rank flavor and other indications of use of inferior materials, such as cheap baking powder, flavorings, tainted meats, rancid butter, etc.

Dishes of food, such as crackers, etc., standing uncovered from meal to meal.

Undue handling of food materials.

Alternating the handling of food materials and money.

Careless sneezing and coughing over the food.

Serving of oleomargarine without due notification.<sup>2</sup>

## VI General Considerations.

Reasonable relation between charges made and service rendered. . . . . 10

## Discredit:

Discrepancies between advertised service and service as actually rendered.

Display of dummy menu cards.

Narrow margin of time for meals.

Permitting waiters to receive extra fees, tips, etc.

<sup>2</sup> Tenth Annual Report of Illinois State Food Commissioner. The Oleomargarine Law, page 443, Section 4.



## A LETTER TO FOOD MANUFACTURERS.

The Department of Home Economics of the New York State College of Agriculture at Cornell University recently sent out the following letter to a number of food manufacturers:

DEAR SIR:

Knowing that as a manufacturer you are interested in securing properly trained employees, we address you on a subject of great educational interest to us and which we believe will be of equal commercial interest to you.

You may have observed that during the last few years considerable progress has been made in American schools and colleges toward the training of women for practical efficiency. A large part of this progress has been accomplished in the courses usually referred to under the names of domestic art and domestic science. Such courses are designed mainly to prepare women to be efficient in their homes. But there is no reason why they should not be equally serviceable in preparing women to be efficient in certain kinds of industrial money-earning work. The instruction given in the domestic science courses, for instance, relates particularly to food and it can easily be so extended as to give the pupil a thorough grounding in the commercial, as well as in the domestic, selection and preparation of food products. It is this aspect to which we wish especially to draw attention.

Manufacturers frequently make complaints with regard to the imperfect training of women for industrial work and with regard to their inadequate interest in such work. Both the lack of training and the lack of interest are to be deplored. There should be a coöperation here between employer and educator. The educator should keep in mind the needs of industry. The employer should explain those needs. We hope therefore that when you come to answer the enclosed questions you will feel yourself free to go beyond them, if you so choose, and to give us whatever suggestions may occur to you on the general topic of the preparation of women for industrial and commercial life.

(1) To how large an extent, in your factory, do you need people who are expert at devising recipes, at improving the mixtures of ingredients and the methods of cooking, at forecasting and meeting the changes in public taste, and, in general, at superintending the *technical* processes of getting your food products ready for the market?

(2) What is the scale of remuneration for such work?

(3) Are women employed by you at such work? Do you regard women as being competent to hold the higher technical positions in your industry? The management of the preparation of food has always been one of the occupations in which women have been employed **in the home**. Are there, in your opinion, good reasons why women are not suited to positions of technical management in the preparation of food **in the factory**? We should be glad to have you answer this question very frankly.

(4) If you had charge of the education of girls for self-support in the kind of work above outlined, what courses of study and practice would you lay out for them?

Yours respectfully,

## D'AVENELS "EVOLUTION OF PRIVATE EXPENDITURES DURING SEVEN CENTURIES."

HELEN W. ATWATER.

The Vicomte d'Avenel, a French economist and educator, has recently been publishing in the *Revue des Deux Mondes* a series of articles entitled The Evolution of Private Expenditures During Seven Centuries.<sup>1</sup> He has collected facts from official reports, tax-lists, trade, market and sumptuary regulations, and also from private memoirs and especially such family budgets and accounts as have been preserved. Although naturally more material is available regarding the expenditures of kings and high nobles in the earlier periods, nevertheless there is considerable information concerning the cost of living among the lesser nobles and the bourgeoisie, and not a little regarding living conditions among all classes at different periods. The main purpose of the present articles is the development of a sociological theory, but many of the facts cited by the author are of interest to students of living conditions past and present.

The first article is entitled The Leveling of Pleasures and deals mainly with the changes which the spread of material comforts has made in the relative conditions of all classes of society, the consequent advantages being greatest among the poor.

Among all the changes those which affect the table have been of the greatest importance to the very poor, for the reason that in their budgets food holds an irreducible place. In the time of famine, it was the poor only who starved to death. A manual laborer in the fifteenth century spent a third of his wages for food, in the middle of the sixteenth, one-half, and from then until the French Revolution, nearly two-thirds. Nevertheless, the character of his food deteriorated rather than improved; meat had practically disappeared from his diet by the eighteenth century. In the case of the bourgeois and the noble, on the contrary, the cost of food lessened from century to century, though the price of individual food materials varied irregularly.

<sup>1</sup> *Revue des Deux Mondes*, 5th series, 51 (May 9, 1909); 54 (November 15, 1909); 56 (March, 1910).

The table of a high official under Louis XIII cost three times that of a man of similar income and position today.

In spite of the large amounts which they paid for their food, the upper classes were neither as fastidious nor as prodigal in their daily eating as one would be tempted to believe. Madame de Maintenon considered it exorbitant that her sister-in-law wanted preserves at "collation," or butter at breakfast. This seems to us a little severe in a household employing ten servants, whose daily expenditure for food materials amounted to 42 francs or 3.5 francs a person. During the last five, or even the last two centuries, rich and poor have changed the character of their food, but the change has been much greater in the case of the poor, as is seen from the second article which deals with the special food materials. Whereas the discovery and circulation of many new materials produced merely an economy for the rich, it procured new pleasures for the poor. They have gained a material advantage in that wealth is available to them which was formerly out of their reach and a moral advantage in that their condition differs much less from that of the upper classes.

The second article is a review of the changes in the food supply of the French people during the last seven centuries. The popular impression is that the people of previous centuries were much heartier eaters than those of our day, but a close analysis of the facts presented in the various records that have come down to us does not carry out this idea. The great feasts, both public and private, of the earlier centuries and the ceremonious meals of the court and the rich nobles presented very long and elaborate bills-of-fare, but judging from the size of the silver serving dishes used on such occasions the quantities served each person were much smaller than is the case nowadays. Moreover, although many dishes were presented to each guest, it was not expected that he should help himself to more than a few. The tremendous expenditure which the court and nobles were obliged to keep up as regards their table was due not so much to the amount of food served each individual as to the enormous number of people whom etiquette obliged the man of means and station to admit to his table. Both the number of dishes served and the number of persons fed at princely tables were greatly reduced during the last two or three centuries of the monarchical régime. Further there is reason to believe that even at the royal tables the cooking was poor and the quality of the food often inferior.

The foods served in those days, though they may bear the same

name as those served today, differed very greatly in quality. What is ordinarily known as bread today, that is, bread made from fine wheat flour, was procurable in France only by the very rich up to the time of the French Revolution. Under Louis XV, it was made only by certain bakers who brought it to Paris only two days in the week. Today, on the other hand, almost every French family can get the fine wheat bread fresh every day. Beef and veal are today entirely different substances from what they were in previous centuries, as regards quality. Although the price of the animal per head has risen since the Middle Ages, the weight of the carcasses has more than doubled and there is no comparison between the number of cattle specially bred for the table today and those of earlier centuries. In fact the meat cattle of previous centuries were hardly more than wild cattle, and at the close of the old régime even this inferior meat was scarcer and dearer than during the Middle Ages. Lard, tallow, etc., two centuries ago were too expensive to be commonly used in cooking. It is only within the last fifty or sixty years that French cattle have been specially bred for food in any quantity, while the development of the art of slaughtering on a large scale is of even later date.

Although owing to the fasts prescribed by the church fish was more commonly eaten than at present, the kinds of fish were very few. Because of the poor transportation, good fresh fish was rare except at the seashore and on a few rivers. When it reached other parts of the country it was in such a condition that it would hardly pass for edible today, consequently salt fish was almost the only kind available and that was crudely salted. The maritime fisheries which are now so important an industry in France have doubled in importance during the last forty years and have completely changed the kind and character of the salted fish. The large private lakes or ponds maintained by the wealthy for a supply of fresh water fish were frequently leased at prices which show that the cost of such fish must have been almost prohibitive, except among the well-to-do.

Poultry has also changed in character and table quality. New varieties have been introduced, the art of fattening has been very greatly improved, and prices have fallen considerably.

The price of dairy products has not changed so greatly in the summer season, but the difference between winter and summer prices is much less than in former years. Until the last century, fresh butter was practically prohibitive in price during the winter. Under Louis XIV, butter from Vanvres which was considered best, and was almost



the only kind to be obtained sweet, cost 10 francs per kilo and it was only toward the end of the eighteenth century that dairymen in other parts of France learned how to make butter of equally good quality. The varieties of cheeses have greatly increased during the last century. Brie was practically the only one of the now famous kinds known in the fifteenth century. Many of those famous in the sixteenth century are now unknown while Roquefort, Pont-l'Eveque, etc., are of recent origin.

Out-of-season fruits, although known to a certain extent in the sixteenth century, brought such tremendous prices that they were available only to the very wealthy. It is only within the last fifty or seventy-five years that the art of forcing vegetables and small fruits under glass has been developed. The number of common vegetables has been very greatly increased during the last two or three hundred years. Beans, asparagus, melons, cauliflower, salsify, tomatoes, beets, peas have all been introduced since the sixteenth century. The greatest evolution in the matter of vegetables is due to the potato. This was accepted in France even more reluctantly than in most other countries of Europe, but the annual crop in 1815 had reached 30 million quintals and today amounts to 120 million. Rice was a rarity and luxury in France, even in the eighteenth century, and cost from 2 to 3 francs a kilo whereas today it has fallen to 75 centimes a kilo for the poorer qualities. In the sixteenth century the first attempt was made to cultivate strawberries in the garden. This industry has grown tremendously until today a veritable army of special workmen are required to pick the berries. Oranges cost 5 francs a piece in the fourteenth century and pomegranates 10 francs each. The consumption of oranges in France has tripled in the last twenty-five years. The importation of bananas has grown enormously during the same period.

The wines have changed character and origin; whereas formerly they were grown in any fairly favorable locality, they now tend more and more to be produced only in the south of France. Formerly very little wine was bottled and consequently much was wasted through deterioration in the casks. The good wines have not greatly increased in price but ordinary wines have become much cheaper. Of course fortifying, etc., is more usual now. When tea was first introduced in 1648 it cost from 20 to 30 francs a kilo. It was boiled rather than infused and ordinarily drunk with equal parts of milk. Cocoa which was introduced by Spaniards in 1520 was early considered as a drug, opinion differing as to whether it was dangerous or beneficial.

Coffee introduced in the seventeenth century rapidly became popular. Its price has decreased and the amount consumed has increased steadily.

The third article in the series deals with the history of table service and cooking and incidentally with table manners. In 1500, we are told, Frenchmen of good breeding, like the Gauls at the time of the Roman conquest, ate with their fingers, drank, in due order of precedence, from a common goblet, and cut their food with the knives they wore in their girdles. Later a two-handled dish was provided for each couple and was considered a great mark of refinement. In 1763 an English traveler remarked that each Frenchman had his own cup at an inn table and not one shared by a dozen dirty mouths as in England. Among the poorer people, however, all drank out of the common pitcher. Forks were unknown until about 1650, and it was considered elegant to eat with three fingers, and not to dip them into the dish beyond the second joints. Another point of etiquette was for all who were to share the meal to wash their hands in each other's presence just before eating "whether this was necessary or not." Saint Simon speaks of the man who invented the modern form of fork as a person of "redoubtable cleanliness." Inventories of the property of kings and nobles show large amounts of gold and silver dishes, but these were mainly "show" or serving pieces and included few individual plates or spoons. Plates were never changed between the courses of even the longest banquet. Often, however, a large slice of bread was put on the plate, and the meat or other food was served on and eaten with this, a fresh slice being provided for each course. Bones, fruit and vegetable skins, etc., were simply thrown on the floor and scrambled for by the dogs, or the lower servants. This custom came to be considered inelegant among the wealthy, though it long survived among the lower classes, as did also the practice of using the edge of the table cloth as we use individual napkins.

Where the richest used dishes of silver, people in comfortable circumstances used some form of tin. It sometimes contained as much as four-fifths lead, and was occasionally melted down for bullets in a siege. Pewter was not made until the seventeenth century. The poor ate out of wooden dishes which were seldom renewed, though of course most difficult to clean. These cost as much as white glazed earthenware today. Pottery was too heavy, expensive, and breakable to be practicable for table use, and until the secret of using kaolin in the manufacture of porcelain was discovered in the eighteenth

century, the only fine wares were those imported from China. The modern processes of making cheap glazed crockery and plated silverware have been the most important factors in raising the general standard of table service, and both of these were inventions of the nineteenth century. It is said that five times as much silver is now annually used in France for plating alone as was used for all purposes two centuries ago. The use of glassware has passed through much the same general changes as silver. The masterpieces of the renaissance glass-blowers were mainly large showpieces, and what small table pieces were made were far too expensive for common use, even on princely tables, costing twice as much as the more durable wooden cups. Glass for windows and mirrors was also a comparatively late introduction; at the end of the seventeenth century there existed in Paris a company which set paper into house windows and was patronized mainly by the well-do-to. It is only within seventy-five years that such inexpensive glass as we now know has been produced.

There have been many changes of taste in the matter of cooking in the last centuries. Some of these are more curious than significant; as, for instance, that in the fifteenth century eggs cooked in rose-water were considered a great delicacy. Probably no one fact regarding the cuisine of the Middle Ages seems more striking than the fondness for spices. They were extremely costly, pepper, the cheapest of all, costing seven or eight times as much as today. They were, therefore, accessible only to the rich, and their use was considered a mark of affluence and especially desirable on ceremonious occasions. At a banquet given in 1514 where the total cost was 1160 francs, the accounts show 711 francs to have gone for spices. Saffron and flavors practically unknown today were used in great quantities in all kinds of cooking.

Much more important from an economic point of view than the change in such extreme tastes among the wealthy has been the decrease in the cost of salt, sugar, oil, vinegar, etc. Our author points out that the reduction of the salt tax was the only result of the Revolution which directly decreased the cost of living. Under the old régime, not only was the tax high, but each family was obliged to buy so much a person whether they wished to or not. Oil has come into common use in France only since the introduction of cotton-seed and other cheap oils has brought down the price, and there has been an improvement in the quality of olive oil. Olive trees were formerly

little cultivated in France and the oil was frequently fit only for burning.

During the Middle Ages sugar was a great luxury, costing as much as 30 francs a kilo. In the seventeenth century, people in easy circumstances could afford a little as a delicacy, but up to the eighteenth century it was sold only by pharmacists, and the use of sweet cakes, dragées, and other candies was a mark of wealth. The cheap method of refining and transporting cane sugar and the development of the beet sugar industry during the last half century have finally brought sugar and articles made from it within the reach of all. Eighty years ago the annual consumption in France was 2 kilos per head; it is now 16 kilos per head, and in England 40 kilos.

Cooking was poorly done in former times, even for the wealthy. Though families sent their roasts to the baker's to be cooked, the results were usually far from good.

From studies of private budgets of different periods it appears that formerly as much or more was spent for food than today, but that the money brought poorer returns both in quality and in quantity. In considering the material welfare of any period the standard rather than the mere cost of living must be considered. There can be no doubt that the standard of living has risen among all classes but most among the poor, and that in practically every instance the rise has followed some improved method of production.



## SANITATION AND OTHER SIMILAR WORK IN MANILA.

The recently published report<sup>1</sup> of V. G. Heiser, director of health of the Philippine Islands, calls attention to improvements which have been introduced in market conditions, and gives an account of the Manila slaughterhouses, the work of the department of sanitation and transportation, the efforts made to overcome the dust nuisance in Manila, and the work generally along lines of public charities and correction.

As regards improvements in market conditions, food is now sold only from tables instead of "from the floor and filthy inclosed spaces under the tables," as was formerly the case.

"The fact that fresh meat in Manila can only be sold in a public market building has made its inspection effective and has given Manila an advantage which is enjoyed in only a few of the leading cities of the world. . . .

"These markets were freed from all inclosures and contrivances in which unsuitable food or filth might be hidden from view and concealed; the venders of the same class of goods were assigned to certain sections of the market, and were required to expose all food supplies on tables or pans and not on the floor; drains and receptacles were provided for refuse; the markets were well lighted; suitable tables, pans, racks, etc., were installed, and the premises, tables, and all utensils kept in a clean and sanitary condition. Wares not properly classified as food supplies were excluded from the market."

Market sheds and other improvements of a similar character have also been introduced.

"The question of the food supply of the inhabitants of a city is always an important one, and deserves close and careful study from many points of view, some of which pertain to the proper inspection of food so that no diseased, unsound, or unfit food is sold or consumed; the manner of handling and exposing food for sale; adequate and clean market buildings and fixtures; a proper and just system of assignment of space and privileges of vendors, whereby all dealers

<sup>1</sup> Ann. Rept. Bur. Health Philippine Islands, 1909, pp. 29-36.

or producers of food supplies can have ready access to the public to market their wares; and a proper supervision and control of the marketing of food supplies in so much as can be done to prevent the fostering of special privileges and the building up of monopolies in the sale of certain food supplies.

"The welfare of the people in any community demands that they should be protected from dealers of unwholesome food, should not pay unusual or exorbitant prices for food, and should be able to procure their food supplies within the limits of their own community.

"The markets of Manila have undergone a great transformation since the advent of Americanism, and when the plans now under contemplation are carried out, Manila may safely place these institutions in her list of attractions."

The department of sanitation and transportation "is under control of the city of Manila and is charged with the responsibilities of street sprinkling and flushing, street sweeping and gutter cleaning; the collection and disposal of garbage, house refuse, and dead animals; the filling of lowlands; the collection and disposal of night soil and public closets; the administration of the city pound; the sanitary care of markets and slaughterhouses; the transportation of meat; the care and administration of cemeteries; the maintenance and development of parks, trees and plant nurseries; the care of city walls; the improvement of public grounds; the administration of all land transportation of the city, and the service of this character for the Insular Government.

"The collection and disposal of garbage, house refuse, and dead animals is an important branch of the work with which this department is charged, and is carried on principally between 9 p.m. and 6 a.m. The garbage and refuse from dwellings, factories, shops, stables and similar places, are collected by carts which pass along regular itineraries, collecting the garbage and refuse placed on the curbing in separate receptacles as required by city ordinances. The material suitable for filling in lowlands is applied to that purpose, and the garbage, slops, and organic matter find their way to one of the two city crematories.

"Dead animals weighing thirty pounds or less are considered garbage and are deposited in the regular garbage receptacles. Those of greater weight are collected in wagons specially designed and constructed for this purpose, and are either burned or sold to factories to be manufactured into trade products.

"Night soil is collected by odorless excavators from vaults and cesspools, and by the pail conservancy system from premises where there are no closet systems installed. The collections are emptied into tanks on the steam barge *Pluto* and carried out to sea. . . .

"The pail conservancy system will have to be maintained in the districts of light material even after the new sewer system [now being introduced] is in full working operation, both in the public closets and as a domiciliary sanitary measure. . . .

"The pail conservancy system as it is operated in Manila is a clearly efficient method of sanitation second only to the water-closet system, and might well be adopted in many towns in the United States where earth closets are now permitted."

The efforts which have been made for dust suppression are as well worthy the attention of sanitary engineers elsewhere as in the Philippines.

"Much has been done in Manila during the past few years to overcome the dust nuisance. The department of sanitation and transportation of the city government has established a very thorough system of street sprinkling for the dry season. Last year this office issued a circular which was put into force by the executive secretary in all the public buildings of Manila, in which attention was called to the habit that had formerly prevailed of sweeping the floors without dust precautions while the employees were still at their desks, and the dangers thereof, and attention was invited to the fact that by reason of the prevalence of tuberculosis in the Philippines and of the careless habits in spitting, the dust of offices often became laden with the deadly tubercular bacilli which might enter the system by means of the inspired air. The circular enjoined that there should be no more dry sweeping in government buildings, and required that floors should be thoroughly sprinkled with wet sawdust before they were swept, and that they be not disturbed as long as there were any employees at their desks. On account of the fact that this new method of sweeping was not in accordance with the former custom, some opposition to it developed, but this finally yielded to persuasion, and now the method has been quite generally adopted in public buildings.

"This system of dust suppression is recommended to housekeepers and to stores, hotels, and other places where dust continues to be a source of danger."

# INSTITUTIONS IN THE UNITED STATES GIVING INSTRUCTION IN HOME ECONOMICS.

MARIE T. SPETHMANN.

*Office of Experiment Stations, U. S. Department of Agriculture.*

(Concluded from the June Number.)

## II. INSTITUTIONS FOR NEGROES.

### I. INSTITUTIONS RECEIVING AID FROM THE FEDERAL GOVERNMENT.

| STATE OR<br>TERRITORY.  | NAME OF INSTITUTION.                                                | LOCATION.          |
|-------------------------|---------------------------------------------------------------------|--------------------|
| Alabama . . . . .       | Ag. and M. College for Negroes                                      | Normal             |
|                         | Tuskegee Normal and Industrial Institute                            | Tuskegee Institute |
| Arkansas . . . . .      | Branch Normal College                                               | Pine Bluff         |
| Delaware . . . . .      | State College for Colored Students                                  | Dover              |
| Florida . . . . .       | Florida Ag. and M. College for Negroes                              | Tallahassee        |
| Georgia . . . . .       | Georgia State Industrial College                                    | Savannah           |
| Kentucky . . . . .      | Kentucky Normal and Industrial Institute                            | Frankfort          |
| Louisiana . . . . .     | So. Univ. and Agr. and M. College                                   | New Orleans        |
| Maryland . . . . .      | Princess Anne Academy                                               | Princess Anne      |
| Mississippi . . . . .   | Alcorn Agricultural and Mechanical College                          | Alcorn             |
| Missouri . . . . .      | Lincoln Institute                                                   | Jefferson City     |
| Oklahoma . . . . .      | Agricultural and Normal University                                  | Langston           |
| So. Carolina . . . . .  | Colored Normal, Industrial, Ag. and M.<br>College of South Carolina | Orangeburg         |
| Texas . . . . .         | Prairie View State Nor. and Ind. College                            | Prairie View       |
| Virginia . . . . .      | Hampton Normal and Agricultural Institute                           | Hampton            |
| West Virginia . . . . . | West Virginia Colored Institute                                     | Institute          |



## 2. INSTITUTIONS NOT RECEIVING AID FROM THE FEDERAL GOVERNMENT.

| STATE OR TERRITORY.      | NAME OF INSTITUTION.                         | LOCATION.      |
|--------------------------|----------------------------------------------|----------------|
| Alabama . . . . .        | Alabama Industrial School                    | Birmingham     |
|                          | Calhoun Colored School                       | Calhoun        |
|                          | Centerville Industrial Institute             | Centerville    |
|                          | Corona Industrial Institute                  | Corona         |
|                          | Kowaliga School                              | Kowaliga       |
| Arkansas . . . . .       | Talladega College                            | Talladega      |
|                          | Lincoln High School                          | Fort Smith     |
|                          | M. W. Gibbs High School                      | Little Rock    |
| District of Columbia . . | Howard University                            | Washington     |
| Florida . . . . .        | Armstrong Manual Training School             | Washington     |
|                          | Fessenden Academy                            | Fessenden      |
| Georgia . . . . .        | Spelman Seminary                             | Atlanta        |
|                          | Paine College                                | Augusta        |
|                          | Dorchester Academy                           | McIntosh       |
|                          | Negro Normal and Industrial School (Private) | Social Circle  |
|                          | Clark University                             | South Atlanta  |
| Indiana . . . . .        | High School                                  | Evansville     |
|                          | High School                                  | Madison        |
| Kentucky . . . . .       | Colored High School                          | Louisville     |
|                          | Colored High School                          | Owensboro      |
| Louisiana . . . . .      | Sabine Industrial Institute                  | Converse       |
|                          | Straight University                          | New Orleans    |
|                          | New Orleans University                       | New Orleans,   |
| Maryland . . . . .       | Laurel Agr. and Industrial Institute         | Laurel         |
|                          | Colored Industrial Grammar School            | Salisbury      |
|                          | Normal and Agricultural Institute            | Sandy Spring   |
| Mississippi . . . . .    | Mt. Hermon Seminary                          | Clinton        |
|                          | Rust University                              | Holly Springs  |
|                          | Jackson College                              | Jackson        |
|                          | Tougaloo University                          | Tougaloo       |
| Missouri . . . . .       | High School                                  | Chillicothe    |
|                          | High School                                  | Hannibal       |
|                          | Lincoln High School                          | Kansas City    |
| New Jersey . . . . .     | Ml. Tg. and Ind. School for Colored Youth    | Bordentown     |
|                          | State Colored Normal School                  | Elizabeth City |
|                          | J. K. Brick Agr. Indus. and Normal School    | Enfield        |
|                          | State Colored Normal School                  | Fayetteville   |
| North Carolina . . . . . | Henderson Normal Institute (Private)         | Henderson      |
|                          | Shaw University                              | Raleigh        |
|                          | Saint Augustine's School                     | Raleigh        |
|                          | State Normal and Industrial School           | Winston-Salem  |
|                          | Waters Normal Institute (Private)            | Winton         |

| STATE OR TERRITORY. | NAME OF INSTITUTION.                         | LOCATION.      |
|---------------------|----------------------------------------------|----------------|
| Pennsylvania        | Institute for Colored Youth                  | Cheney         |
|                     | Downington Industrial and Agr. School        | Downington     |
|                     | Avery College Training School                | Pittsburg      |
|                     | Brainerd Institute                           | Chester        |
| South Carolina..... | Avery Normal Institute                       | Charleston     |
|                     | Penn. Normal Industrial and Agr. School      | Frogmore P. O. |
|                     | Sterling Industrial College                  | Greenville     |
|                     | Clafin University                            | Orangeburg     |
| Tennessee ....      | Lane College                                 | Jackson        |
|                     | Knoxville College                            | Knoxville      |
|                     | Fisk University                              | Nashville      |
|                     | Samuel Huston College                        | Austin         |
| Texas.....          | Tillotson College                            | Austin         |
|                     | Bishop College                               | Marshall       |
|                     | Christiansburg Industrial Institute          | Cambria        |
|                     | Temperance, Ind. and Coll. Institute         | Claremont      |
| Virginia.....       | Dinwiddie Agr. and Ind. School               | Dinwiddie      |
|                     | St. Paul Normal and Industrial School        | Lawrenceville  |
|                     | Virginia Collegiate and Industrial Institute | Lynchburg      |
|                     | Manassas Ind. School for Colored Youths      | Manassas       |
|                     | Norfolk Mission College                      | Norfolk        |
|                     | Virginia Normal and Industrial Institute     | Petersburg     |
|                     | Union Industrial Academy                     | Port Conway    |
| West Virginia       | Hartshorn Memorial College                   | Richmond       |
|                     | Colored High School                          | Richmond       |
|                     | Bluefield Colored Institute                  | Bluefield      |
|                     | Storer College                               | Harper's Ferry |

## III. INSTITUTIONS FOR INDIANS.

| STATE.       | NAME OF INSTITUTION.                       | LOCATION.     |
|--------------|--------------------------------------------|---------------|
| Arizona..... | Blackwater Day School                      | Blackwater    |
|              | Navajo Training School                     | Fort Defiance |
|              | Moqui Indian Training School               | Keams Cañon   |
|              | Indian Training School                     | Leupp         |
|              | Fort Mohave Indian School                  | Mohave City   |
|              | Colorado River Indian School               | Parker        |
|              | Phoenix Indian School                      | Phoenix       |
|              | St. John's Mission School                  | Phoenix       |
|              | Pima Indian Training and Industrial School | Sacaton       |
|              | Tolchaco Industrial School                 | Tolchaco      |
|              | Havasupai Indian School                    | Supai         |

| STATE.          | NAME OF INSTITUTION.                               | LOCATION.      |
|-----------------|----------------------------------------------------|----------------|
| Arizona.....    | Methodist Industrial School (for Mexican girls)    | Tucson         |
|                 | Truxton Cañon Indian School                        | Valentine      |
|                 | Tucson Day School                                  | Tucson         |
|                 | Fort Apache Indian Training School                 | Whiteriver     |
|                 | Fort Yuma Indian Training School                   | Yuma           |
|                 | St. Boniface's Industrial School                   | Banning        |
|                 | Cahuilla Day School                                | Cahuilla       |
| California..... | Round Valley Indian School                         | Covelo         |
|                 | Indian Industrial School                           | Fort Bidwell   |
|                 | Industrial Training School                         | Greenville     |
|                 | Capitan Grande School                              | Lakeside       |
|                 | Pala Indian Day School                             | Pala           |
|                 | Volcan Day School                                  | Santa Ysabel   |
|                 | Soboba Indian Day School                           | San Jacinto    |
| Colorado.....   | La Jolla Indian Training School                    | Soboyame       |
|                 | U. S. Indian School                                | Grand Junction |
|                 | Indian Training School                             | Navajo Springs |
| Idaho.....      | Fort Lapwai Indian School                          | Lapwai         |
|                 | Fort Hall Indian Training and Industrial School    | Rossfork       |
| Kansas.....     | Haskell Institute                                  | Lawrence       |
| Michigan.....   | U. S. Indian Training School                       | Bay Mills      |
|                 | Mount Pleasant School                              | Mount Pleasant |
|                 | Cass Lake Indian School                            | Cass Lake      |
|                 | Nett Lake School                                   | Nett Lake      |
| Minnesota....   | Pipestone Indian Training School                   | Pipestone      |
|                 | U. S. Indian Training School                       | Red Lake       |
|                 | Vermillion Lake Indian School                      | Tower          |
|                 | White Earth Boarding School                        | White Earth    |
|                 | Holy Family Mission                                | Family         |
| Montana.....    | Fort Belknap Indian Training and Industrial School | Harlem         |
|                 | Poplar River Training School                       | Poplar         |
|                 | St. Paul's Mission                                 | St. Paul's     |
|                 | St. Xavier's Mission                               | St. Xavier     |
| Nebraska.....   | Genoa Indian Industrial School                     | Genoa          |
|                 | Santee Normal Training School                      | Santee         |
|                 | Fort McDermitt Indian School                       | McDermitt      |
|                 | Western Shoshone Indian School                     | Owyhee         |
| Nevada.....     | U.S. Walker River Indian Training School           | Schurz         |
|                 | Carson Indian Training School                      | Stewart        |
|                 | Nevada Boarding School                             | Wadsworth      |

| STATE.          | NAME OF INSTITUTION.                          | LOCATION.                  |
|-----------------|-----------------------------------------------|----------------------------|
| New Mexico..    | U. S. Indian School                           | Albuquerque                |
|                 | Zuni Indian Boarding School                   | Blackrock                  |
|                 | Isleta Day School                             | Isleta                     |
|                 | Jewett Navajo School                          | Liberty                    |
|                 | Mescalero Indian Industrial School            | Mescalero                  |
|                 | Rehoboth Mission School                       | Rehoboth                   |
|                 | Indian Industrial School                      | Santa Fe                   |
| North Carolina  | St. Catherine's Industrial School             | Santa Fe                   |
|                 | Government Indian Day School                  | Zuni                       |
|                 | Indian Industrial School                      | Cherokee                   |
| North Dakota    | No. 2 Day School                              | Belcourt                   |
|                 | No. 4 Day School                              | Belcourt                   |
|                 | Fort Berthold Industrial School               | Elbowoods, via<br>Bismarck |
| Oklahoma....    | Indian Industrial School                      | Fort Totten                |
|                 | U. S. Standing Rock Indian Training School    | Fort Yates                 |
|                 | No. 3 Day School (Indian)                     | Laureat                    |
|                 | Wahpeton Indian School                        | Wahpeton                   |
|                 | U.S. Kiowa Indian Training School             | Anadarko                   |
|                 | Arapaho City Schools                          | Arapaho                    |
|                 | Chilocco Indian School                        | Chilocco                   |
|                 | Cheyenne and Arapaho Indian Industrial School | Darlington                 |
|                 | Pawnee Indian Training School                 | Pawnee                     |
|                 | Red Moon Indian School                        | Hammon                     |
|                 | Otoe Boarding School                          | Otoe                       |
|                 | Osage Boarding School                         | Pawhuska                   |
| Oregon.....     | St. Mary's Academy Sacred Heart               | Sacred Heart               |
|                 | Shawnee Indian School                         | Shawnee                    |
|                 | Sac and Fox Indian Industrial School          | Stroud, RFD 2              |
|                 | Murrow Indian Orphans' Home                   | Unchucka                   |
| Pennsylvania... | Kaw Indian Training and Industrial School     | Washunga                   |
|                 | Ponca Indian Training School                  | Whiteagle                  |
|                 | Seneca Indian School, Quapaw Agency           | Wyandotte                  |
|                 | Salem Indian School                           | Chemawa                    |
| South Dakota.   | Klamath Indian Training School                | Klamath Agency             |
|                 | Umatilla Indian Industrial School             | Pendleton                  |
|                 | Warm Springs Indian School                    | Warmspring                 |
| South Dakota.   | U. S. Indian School                           | Carlisle                   |
|                 | No. 24 Day School                             | Allen                      |
|                 | No. 8 Indian Day School                       | Cherry Creek               |
|                 | Cheyenne River Boarding School                | Cheyenne Agency            |
|                 | Crow Creek School                             | Crow Creek                 |
|                 | Red Leaf Day School                           | Cutmeat                    |



| STATE.         | NAME OF INSTITUTION.                      | LOCATION.                    |
|----------------|-------------------------------------------|------------------------------|
| South Dakota   | Cutmeat Day School                        | Cutmeat                      |
|                | Upper Cutmeat Day School                  | Cutmeat                      |
|                | No. 2 Day School                          | Dupree                       |
|                | Indian School                             | Flandreau                    |
|                | No. 18 Day School                         | Kyle                         |
|                | No. 19 Day School                         | Kyle                         |
|                | No. 23 Day School                         | Kyle                         |
|                | No. 29 Day School                         | Kyle                         |
|                | No. 14 Day School                         | Lacreek                      |
|                | Lower Brule Boarding School               | Lower Brule                  |
|                | No. 10 Day School                         | Manderson                    |
|                | No. 12 Day School                         | Manderson                    |
|                | Black Pipe Day School                     | Norris                       |
|                | Corn Creek Indian Day School              | Norris                       |
|                | Oahe Industrial School                    | Oahe, near Pierre            |
|                | No. 3 Day School                          | Pine Ridge                   |
|                | Indian Day School No. 5                   | Pine Ridge                   |
|                | No. 6 Day School                          | Pine Ridge                   |
|                | No. 25 Day School                         | Pine Ridge                   |
|                | No. 26 Day School                         | Pine Ridge                   |
|                | No. 15 U. S. Indian Day School            | Porcupine                    |
|                | Rapid City Indian School                  | Rapid City                   |
|                | Rosebud Boarding School                   | Rosebud                      |
|                | "He-Dog's Camp School"                    | Rosebud                      |
|                | Sisseton Boarding School                  | Sisseton                     |
|                | Indian Training School                    | Springfield                  |
|                | Immaculate Conception School              | Stephan                      |
|                | No. 7 Day School                          | White Horse                  |
|                | White Thunder Day School                  | Wood                         |
| Washington...  | Utah Boarding School                      | Whiterocks                   |
|                | Chehalis High School                      | Chehalis                     |
|                | U. S. Colville Indian Training School     | Fort Spokane,<br>Miles P. O. |
|                | Quileute Day School                       | La Push                      |
|                | Neah Bay Indian School                    | Neah Bay                     |
| Wisconsin .... | Tulalip Training School                   | Tulalip                      |
|                | U. S. La Pointe Indian Training School    | Ashland                      |
|                | Academy of St. Joseph                     | Green Bay                    |
|                | Hayward Training School                   | Hayward                      |
|                | Oneida Indian School                      | Oneida                       |
|                | Lac Courte Oreilles Government Day School | Reserve                      |
| Wyoming.....   | Tomah Indian Industrial School            | Tomah                        |
|                | Wittenberg Boarding School                | Wittenberg                   |
|                | St. Stephens Mission Boarding School      | St. Stephens                 |
|                | Shoshone Indian Mission School            | Wind River                   |

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### I. THE SELECTION OF A HOME.

(With special reference to health.)

1. Sunlight; its benefits, and how to get it. 2. Ventilation of the House and Plans for Life Out-of-doors. 3. How shall we Heat our Houses? 4. How shall we Light our Houses? 5. How shall we get enough Moisture, and not too much? 6. Points on Plumbing.

TEXTBOOK: Household Hygiene, by S. Maria Elliott, Simmons College. Published by the American School of Home Economics, Chicago. Price \$1.50.

### II. THE FURNISHING OF A HOME.

(With special reference to beauty.)

1. Learning of Nature. 2. The Right Use of Materials. 3. Harmony of Color. 4. Beauty of Form and Structure in House Furnishings; Applied Ornament. 5. Wall Coverings and Rugs. 6. Selecting and Framing Pictures.

TEXTBOOK: The Furnishing of a Modest Home, by Fred. H. Daniels. Published by the Davis Press, Worcester, Mass. Price \$1.00.

### III. THE CARE OF A HOME.

(With special reference to economy of time.)

1. The Important Subject of Floor Coverings. 2. The Advantages and Disadvantages of Small Kitchens. 3. Dust and its Dangers. 4. Garbage and Household Waste. 5. New Household Devices.

TEXTBOOKS: The Healthful Farmhouse, by Helen Dodd. Published by Whitcomb and Barrows, Boston. Price 60 cents.

The Up-to-date Home, Bulletin of the American School of Economics, Chicago. Price 10 cents.

Household Management, by Bertha M. Terrill. Published by the American School of Home Economics, Chicago. Price \$1.50.

## IV. PROVIDING THE DAILY MEALS.

(With reference to health, attractiveness and economy of labor.)

1. Shall we buy Household Supplies in Large or Small Quantities?
2. Knowledge of Food Values an Aid to Marketing.
3. Knowledge of Food Values an Aid to Cooking.
4. Food for Children;—the Lunch Box.
5. Food for the Sick.
6. The Art Side of Serving Food.

TEXTBOOKS: Food and Diet, by Alice P. Norton, of the University of Chicago. Published by the American School of Home Economics, Chicago. Price \$1.50.

The Daily Meals of School Children by Caroline L. Hunt, Bulletin of the United States Bureau of Education. To be obtained from the Superintendent of Documents, Washington, D. C. Free.

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The Care and Feeding of Children, by Dr. L. E. Holt. Published by D. Appleton and Co., New York. Price 75 cents.

The Fuels of the Household, by Marian White. Published by Whitcomb and Barrows, Boston. Price 75 cents.

The Principles of Cookery, by Anna Barrows. Published by American School of Home Economics, Chicago. Price \$1.50.

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## AMERICAN HOME ECONOMICS ASSOCIATION. FOURTH ANNUAL MEETING.

WASHINGTON, D. C., DECEMBER 27-30, 1911.

The American Home Economics Association will hold its fourth annual meeting at Washington, D. C., as one of the affiliated societies of the American Association for the Advancement of Science, which meets in Washington December 27-30, 1911.

Meetings will be held at the Henry D. Cooke School, 17th Street and Columbia Road. Headquarters will be at Hotel Gordon, 16th Street between I and K Streets N. W. Dr. C. F. Langworthy, First Vice-President of the Association is Chairman of the local committee. Requests for information should be addressed to him at U. S. Department of Agriculture, Washington, D. C.

### PROGRAM.

#### WEDNESDAY, DECEMBER 27.

- 2:30 p.m.—Meeting of Executive Committee at Hotel Gordon.  
3:30 p.m.— Meeting of Council at Hotel Gordon.

#### THURSDAY, DECEMBER 28.

9:30 a.m.—Convention called to order by the President, Miss Isabel Bevier, University of Illinois.

Paper—Bio-chemistry in the College Curricula in Women's Colleges, Miss Louise Foster, Dept. of Chemistry, Smith College.

Paper—Metabolism Experiments, Miss Alice F. Blood, Simmons College.

Paper—Some Chemical Differences Between Short and Long Process Breads, Miss N. E. Goldthwaite, University of Illinois.

Announcements.

2:30 p.m.—Round Table, in charge of Miss Abby L. Marlatt, University of Wisconsin.



Topic, The Elementary Work in Preparation of Food in College Classes. Participated in by Miss E. C. Sprague, University of Chicago; Miss May B. Van Arsdale, Teachers College; Miss Catherine Mulligan, University of Tennessee; Mrs. Mary Pierce Van Zile, Kansas State Agricultural College.

8:00 p.m.—Reception at Henry D. Cooke School by the Home Economics Association of Washington, D. C. Address by Dr. W. M. Davidson, Superintendent Public Schools, Washington, D. C.

FRIDAY, DECEMBER 29.

9:30 a.m.—General Session, in Charge of Administration Section. Mrs. Mary H. Moran, Chairman, N. E. Kitchen, Boston.

Topic.—School Lunch Rooms, Their Equipment and Organization.

10:30 a.m.—Report of Committee on Entrance Requirements. Miss Jenny Snow, Chairman, University of Chicago.

Report of Committee on Legislation. Dr. B. R. Andrews, Chairman.

Report of Committee on Finance.

Report of Committee on Journal. Discussion of the report.

Discussion of Report of Committee on Nomenclature, reported at San Francisco.

Changes in Constitution. New Business.

1:00 p.m.—Annual Luncheon at Hotel Gordon.

3:30 p.m.—Round Table on the Teaching of Applied Art to College Students. Participated in by Miss Alice Houston Craig, College of Industrial Arts, Denton, Texas; Miss Grace G. Denny, University of Wisconsin; Miss Ella J. Spooner, Simmons College; and others.

8:00 p.m.—Public Meeting. Education and Home Economics, with address of welcome, Philander P. Claxton, U. S. Commissioner of Education. Response, Miss Bevier. Paper, Home Economics and Culture, Mrs. Mary H. Abel, Editor, JOURNAL OF HOME ECONOMICS.

SATURDAY, DECEMBER 30.

9:30 a.m.—Extension Work, in Charge of Miss Rachel H. Colwell.

Extension Work in Kansas, Mrs. Mary P. Van Zile; in Minnesota, Miss J. L. Shepperd; in West Virginia, Miss Colwell.

Unfinished Business. Report of Nominating Committee. Adjournment.

The program as arranged will give opportunity for attending some of the public meetings of the other affiliated societies of the American Association for the Advancement of Science.

## REPORT OF THE SAN FRANCISCO MEETING.

HELEN LOUISE JOHNSON.

The Education Section of the American Home Economics Association met in San Francisco, July 11-13, in conjunction with the National Education Association. The program has been printed in the October Journal (page 409), as has also an account of the first meeting (page 400), devoted to exercises in memory of Mrs. Richards.

On Tuesday evening an informal dinner was given at the Teachau Tavern for the visiting delegates, teachers of Home Economics and visiting friends. A large number attended and a most enjoyable time was passed. All present were called upon to give their names, the institution from which they were graduated or at which they were then studying, and where they were located. It proved most interesting to meet so many from isolated places who obviously were getting inspiration from meeting and knowing those engaged in the same work.

On Wednesday, July 12, the meeting was called to order by President Bevier, who introduced Dr. A. C. True of the U. S. Department of Agriculture. Dr. True presented the paper on The College Curriculum in Home Economics printed on page 421 of this issue.

A paper on the Home Economics movement, by Miss Bevier, followed. Miss S. Maria Elliott of Simmons College, presented a paper entitled A Four Inch Lesson in Health and Economy (see page 428).

The chair was then given to Miss Ednah Rich of the State Normal School of Manual Arts and Home Economics of Santa Barbara. Miss Rich first spoke of the importance of the teaching of Home Economics, how it must be closely guarded from wrong influences and tendencies, and of its correlation with vital civic things and home interests. "Woman's Rights," in her opinion, are to know, to appreciate, to enhance, and to enrich home things.

In the absence of Miss Sarah M. Hummel, who was unable to be present, Miss Ellen M. Bartlett, supervisor of Home Economics in the San Francisco schools, was introduced. Miss Bartlett then gave details of the San Francisco parental school, which presents many

peculiar and interesting problems. This school is situated in the midst of the burned district, a crowded section where home habits and surroundings of the students made many special kinds of help necessary. The students, who are limited to boys, suffer from malnutrition and many are lacking in the ability to earn a living. They are taught to cook, partly for themselves, in part because cooks are in demand in the lumber and mining camps. In order to learn how best to teach them with limited food materials and equipment, Miss Bartlett and her sister visited and studied the methods of teaching the soldiers at the Presidio. She explained the beginnings of the lessons and later on gave details of cost. The boys pay five cents a week, which covers the cost of materials for their lunches, but not the entire outlay, hence the boys are encouraged to reduce the cost in other ways. The cost is about two cents for three meals per person and the foods includes beef stews, beef loaf, macaroni and tomatoes, corn bread, muffins, beans, and dried fruits, with variations according to the left-overs from day to day.

Miss May Secrest of the California Polytechnic School then described certain schools which she had closely observed in foreign countries, among them a public school in Japan and a private school in Naples. Mrs. Lulie Robbins of New York City followed with a description of the work done in the Speyer School, the experimental school of Teachers College, particularly in regard to the evening school and afternoon playroom for children.

Miss Rich then introduced President Kerr of the Oregon Agricultural College, who talked of the importance attached to Home Economics work in Oregon and stated that work had been carried on in the college since 1888, a surprise to the Easterners present. Considerable work is being done, and recently stress has been put on the promotion of the work in the public schools, both elementary and high. He especially emphasized the change of thought in the last ten years in the development of the idea that women are entitled to a training for their own work.

The meeting on Thursday was addressed by Prof. M. E. Jaffa of the University of California, who spoke on Nuts and Fruits as Food, and by Miss Ellen A. Huntington of the Agricultural College of Utah, whose paper on the Application of Science to the Housekeeper's Daily Problems appears on page 440 of this issue.

Miss Bevier reported that the Graduate School of the Association would meet as usual with the Graduate School of Agriculture in 1912,

thereby receiving the benefit of its lecturers and laboratories. Mrs. Alice Peloubet Norton of Chicago University has consented to take the chairmanship of the committee in charge, made vacant by the death of Mrs. Richards. The Graduate School will meet at East Lansing, Mich., with the Michigan State Agricultural College and Mrs. Norton is already in correspondence with Miss Gilchrist, Dean of Women, concerning plans. Later announcements will be made through the JOURNAL.

Resolutions were presented expressing to Miss Bartlett, Miss Rich, Miss Pansell, President of the California Division of Household Arts, and their co-workers, the sincere appreciation of the members for their efforts, through which the meetings had been made so successful.

Miss Bevier again called attention to the plans for the memorial fund and for the Life of Mrs. Richards, the first volume of which is to be issued early in 1912. The question of the support of the JOURNAL was discussed by Miss Elliott and the interest of all women solicited. The formation of a California State Association was also advocated.

Following announcements as to other meetings of the Association, the section adjourned.

DEPARTMENT  
OF  
HOUSEHOLD SCIENCE



## SECOND ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY.

HOTEL LA SALLE, CHICAGO, NOVEMBER 16-18, 1911.

THURSDAY, NOVEMBER 16.

2:30 p.m.—Meeting of section on nursing and social work.

4:00 p.m.—Meeting of executive committee.

5:00 p.m.—Annual meeting of board of directors.

8:15 p.m.—Opening session. Addresses by President Chas. R. Henderson, Dr. George R. Young, Commissioner of Health, City of Chicago; Dr. Hastings H. Hart, New York.

FRIDAY, NOVEMBER 17.

10:30 a.m.—Section meetings.

2:30 p.m.—General session.

Report of committee on birth registration, Dr. W. R. Batt, chairman.

Reports and resolutions from sections on eugenics; midwifery; nursing and social work.

5:00 p.m.—Annual business meeting of the association.

8:15 p.m.—Popular meeting—Addresses by Miss Jane Addams, Dr. W. A. Evans, of Chicago; Dr. H. J. Gerstenberger, Cleveland; Dr. J. W. Schereschewsky, U. S. Public Health and Marine Hospital Service, Washington, D. C.

SATURDAY, NOVEMBER 18.

9:00 a.m.—Meeting of board of directors for election of officers, etc.

10:30 a.m.—General session.

Reports and resolutions from sections on city milk supply; housing; continuation schools of home making.

Resolutions; announcements; closing.

Afternoon—Meeting of executive committee.

At the section meeting, Friday, November 17, on education, and continuation schools of home making, the topic discussed was as follows: "Since the great majority of children leave school before sixteen years of age, and there is a considerable interval before marriage, should school boards create continuation schools of home making where girls (women) with grammar school education (more or less) can receive, even several years after leaving school, free instruction in housewifery, care of children and related matters, thus bringing instruction near the time when it is needed for use? Outline a course for continuation schools of home making."

This concerns girls of marriageable age, even married, not school children; the well-to-do, not the poor alone; the fairly well educated as well as the little educated; those earning wages and those not doing so. The need of such schools is quite universally admitted. Among the chief points for discussion were the practicability and relative values of day instruction, evening classes, and part-time schools; of instruction in class rooms, or in model houses and flats, or in pupils' homes; of details of the curriculum. One question was how to teach the care of infants and children. Is there a more effective and practicable method of public instruction in mothercraft than to co-ordinate the work of the pupils with the service in regular nurseries, hospitals, and institutional homes? Or with the work of either city or school visiting nurses or those supplied by private agencies?

The round table was led by Prof. Marlatt and among those taking part were the president of the American Home Economics Association, Prof. Isabel Bevier, of the University of Illinois; the supervisor of household arts in Chicago public schools, Miss Mary S. Snow; Dr. Fletcher B. Dresslar of the United States Bureau of Education; Dr. Helen MacMurchy, medical officer of the board of education, Toronto, Canada; Mr. Charles McCarthy, secretary of the Wisconsin commission on industrial training; Miss Adele Barrett, president of the Chicago Association of Practical Housekeeping Centers; Prof. J. H. Wright, biologist, Mechanics Institute, Rochester; Prof. Phelps, department of biology, Michigan State Normal College; Dr. Marion Talbot, dean of women, Chicago University; Prof. Frances Squire Potter, university extension work; and Prof. Edna D. Day, department of Home Economics, University of Kansas.

The findings of the conference were summarized and presented briefly at the public session, Saturday morning by Dr. Putnam, Dr. Dresslar, and Prof. Marlatt, followed by general discussion.

## EDITORIALS.

The attention of all members of the American Home Economics Association is called to its Fourth Annual Meeting to be held in Washington December 27-30. The program, preliminary announcement of which is made on page 495, promises to be a good one. The meeting of the American Association for the Advancement of Science at the same time and place during the same week will afford an unusual opportunity to hear of the latest work of investigators in many lines.

The city of Washington has many attractions to offer. It is expected that the final program will be ready for distribution by December 1.

The members of the local committee are Dr. C. F. Langworthy, U. S. Department of Agriculture, Chairman; Miss Emma S. Jacobs, Director of Domestic Science, Washington Public Schools; and Miss Alice Faye Seiler.

Requests for information may be addressed to either Dr. Langworthy or Miss Jacobs.

ISABEL BEVIER, *President.*

When we read in the *Atlantic Monthly* for October an article with this title and learned that its author was "a believer in Domestic Science" and that she holds "much higher ideals of it than do its professional advocates," we felt sure that from a new quarter light was to be shed on questions of moment. For Miss Harkness is a teacher of Latin. Perhaps a ripe educator trained in traditions that have always been claimed to make for the highest culture was to join our ranks and labor with those who are laying the foundations of this newest of the applied sciences! But no, Miss Harkness attacks courses in Domestic Economy as wholly lacking in disciplinary or cultural value and, still more, as cheating the child out of the time for mathematics and Latin. Her remarks seem to be based, unfortunately, on so narrow and mistaken a knowledge of what

such courses really are in any first class school as to render her suggestions of no value; any one of dozens of school catalogues we could name would have given her the needed facts on which to base a criticism that might have proved most suggestive.

That the so-called practical studies may be so taught that they "train for power" and are "mentally nutritive" has been proved again and again, and the same is true of their cultural value; that they are in reality always so well taught that these ends are gained we cannot claim, but the ideal is clearly held and is being more and more approximated; even Latin is not always so taught as to gain these ends, for in many hands it is the mere husks and bones of learning and loathed by the student. These and many other studies furnish the material for culture; success depends on the system and the teacher. "*Die Kultur*," said an eminent German physiologist in our hearing, "*ist keinem Stande eigen*"—"culture is the exclusive possession of no one class;" some degree of it may come through many channels even to the toiler whose days are brightened by the memory of precious stolen hours spent with poet or philosopher whose words have kindled an ardent mind.

But the real question at issue is this: In meeting the modern demand that courses of study shall enable the youth to understand and control his increasingly complex environment, can we expect him at the same time to enter deeply into the life of the past and to spend years in acquiring the classic languages? Would that it were possible, that we need miss out of general education none of the great lessons to be learned from "the glory that was Greece and the grandeur that was Rome!" But art is too long and time too fleeting, the decision is already made for the great majority of students. The English universities, for centuries the unyielding strongholds of the classics, are beginning to feel the rivalry and the stern rebuke of great commercial and industrial schools that have sprung up at their very doors; that enlightened nation, Germany, has already yielded to the demands of its people and has broadened the once rigid requirements of the *gymnasium* and has also established schools of equal rank and honor wherein industrial courses and modern languages hold the front. And yet the most advanced educators do not despair of the future of mental training and culture, for the new may reveal rich possibilities. The American thrush has been adjudged a better singer than the Thracian nightingale and a Keats may yet immortalize it.



At the close of Miss Harkness' article we find its real kernel. She has laid out work for the advocates of Domestic Science. It shall be their duty to construct a wholly new system of housekeeping which shall free women to enter on outside careers, for the home is a "devouring monster" and it is making brilliant women "kitchen-minded." She even says that she knows "good housekeepers whose conversation is not up to their biscuits!"

It is truly unfortunate to be kitchen-minded or parlor-minded or library-minded or anything but broad-minded, but it may not be possible in this imperfect life to quite keep the balance; the pressure of earning a living together with other cramping conditions may quite often force our conversation to a level below our biscuits, in whatever oven they may be baked. Only the professional entertainer could be an exception and he furnishes no biscuits for comparison.

As to the gifted women who find their true expression in some form of art or science or public service and who yet have normal desires for love and home, their number is relatively small and they have always been able to sing, to write, to act, to paint while the kettle has somehow kept on bubbling without their immediate supervision. There are a far greater number who have the longings without perhaps the marked talents for a chosen career and who require at the same time as their right the emotional side of domestic life but do not wish to face what have been considered its duties. They say that the essentials of home-life are weighted with a complicated and out-of-date system. We would remind them that excellent experimental work undertaken in these very schools of Domestic Science is doing much to simplify and enlighten the present system, but when the best has been done, old-fashioned duties and tasks will still remain. This is especially true for those living in the open country and very small towns, where dwell over fifty per cent of our population. We must always remember that the function of emotion is to stimulate to the joyful performance of some outside expression of ourselves; when disconnected with duties, it may degenerate into emotionalism. Precious things are only to be bought with a price. Just as the price of fatherhood is toil for the maintenance of the family, so motherhood means a devotion to the thousand details, material and spiritual, of a life that is to bring the child through infancy and adolescence to normal development. Much may be safely delegated, but the truth remains that the number of hirelings, using the word in its best sense, who are intelligent, well-trained and conscientious, is strictly limited, there are never

enough to go around; and these supremely important relations of life require that the interested person, the woman in the case, must train herself to perform her duty to herself, to her own generation, and to the one to follow.

[We quote the following from the circular that has been prepared by the committee on the Memorial Fund in order that the subscribers to this JOURNAL may all be made acquainted with this unique and most promising plan.

**The Ellen H. Richards Memorial Fund.** We take the liberty of suggesting that however well this committee may do its work, there is plenty of room for volunteer service. Names accompanied by dollars they will welcome from any quarter.]

Mrs. Richards' message to the women of America was: "Control the material things which lie about you, and make natural and social forces do your bidding, in order that you may have time and energy to make life beautiful and gracious and worth-while."

Confident that it is a duty and a privilege to make permanent the inspiration and influence of a life marked to an unusual degree by sanity, wisdom, and helpfulness, the American Home Economics Association proposes to raise a fund of \$100,000 in memory of its organizer and former president, Mrs. Ellen H. Richards.

To make the memorial a worthy monument, it is to be of material "more lasting than bronze." The income from the fund—which is to be invested and administered by a responsible Board of Trustees representing Mrs. Richards' family and The American Home Economics Association—is to be expended in putting on a firm foundation the JOURNAL OF HOME ECONOMICS, the official organ of the Association, and in scholarships and prizes to encourage research work on problems relating to home life. Thus the fund becomes a living factor in the progress and development of the work that Mrs. Richards had most at heart and will go on accomplishing the results that she had set herself to attain. It will arouse an interest in the home; will awaken the American people to a realizing sense of the importance of the home to the community; will stimulate scientific study in its relation to home problems; and will provide a means for the wide dissemination of the results of scientific investigation for the practical help of the teacher and housewife. This fund, therefore, assures for her a sort of "earthly immortality."

In order that the gift may be a thoroughly democratic expression of appreciation and enthusiasm and that it may be participated in by all of Mrs. Richards' friends and by everyone interested to contribute toward the cause of right living, the money will be collected in one-hundred-thousand one-dollar subscriptions. Every cent given will go toward the fund, as a few of Mrs. Richards' personal friends will meet all the expenses connected with collecting the money.

In her latter years, Mrs. Richards came to feel that two of the most important problems that we as a people had to face were the preservation and betterment of our homes and the proper education and training of our children. To these two problems she decided she was called to devote whatever of life was left to her. It was her plan to give her time to the JOURNAL OF HOME ECONOMICS, and to discuss in its pages questions of education and home-making in a way to affect public school conditions and to help and inspire teachers and home-makers. Her unexpected and seemingly untimely death has deprived the country of her invaluable services. It is the purpose of this Memorial Fund to make possible the continuation of this work by other able and practical scientists and to insure the carrying out of Mrs. Richards' general plan.

#### DIRECTIONS TO SOLICITORS.

Make yourself familiar with the above information regarding Mrs. Richards and her work.

Call upon all the people on your list and ask each one to give you a dollar. If a person wishes to give more, let him give it in the name of some member of his family. *There must be a name for every dollar!* Collect the money on the spot and give a receipt for it. When you have called on all the persons on your list, make a complete report to your State Representative and send her the money you have collected. She will send you a receipt for it. If you know any men and women who would give, in addition to the ones on your list, ask them and send their dollar and their names to your State Representative. We want as many names and as many dollars as we can get.

Remember that the interesting features of this memorial are—

That it is a *living memorial* with constantly growing opportunities for service, and that it is so plastic that it can meet the needs of coming generations as well as of our own.

That it is a *democratic expression of interest* in which the richest can have no more part than the poorest.

That it is the purpose of the fund to be an agency in the work of preserving the American home and bettering it.

That anyone who believes in the home ought to be glad to give a dollar to this fund.

#### THE COMMITTEE.

DR. C. F. LANGWORTHY, *Office of Experiment Stations, Washington, D. C.*

MISS ISABEL HYAMS, *26 Wales Street, Dorchester, Mass.*

MISS EDNAH A. RICH, *303 Soto Street, Santa Barbara, Cal.*

DR. B. R. ANDREWS, *Teachers College, N. Y. City.*

MRS. WILLIAM H. BARRETT, *Chairman, 108 Johnson Street, Brooklyn, N. Y.*

## ADDITIONS AND CORRECTIONS OCTOBER JOURNAL.

### *Additions to the list of dates and events in the history of the Home Economics movement.*

1883—Miss Helen Abbott writes a paper on the nutritive value of condiments.

1897—Domestic science course established at Ohio State University.

1901—Home Economics Department is organized at Milwaukee-Downer College.

1902—Home Economics Department organized at University of Illinois.

1906—Miss Bevier and Miss Usher publish *The Home Economics Movement*.

1909—Home Economics Department organized at Cornell University and University of Wisconsin.

### *Additions and Corrections to the list of Mrs. Richards' published writings:*

1881—*The Chemistry of Cooking and Cleaning*. Revised (with S. Maria Elliott) Home Science Pub. Co., 1897; third ed., revised, Whitcomb & Barrows, 1907.

1885—*Food Materials and their Adulteration*. 1898, Home Science Pub. Co. Revised, Whitcomb & Barrows, 1906.

1897—(With Sarah E. Wentworth). Report to his Honor the Mayor, and to the Institutions Commissioner, on the Dietaries of the Nine Institutions of the City of Boston. Second Ann. Rpt. Institutions Commissioner, Boston, 1897 (City Doc. No. 14).

1899—*Cost of Living*. Third edition, 1905.

1900—(With A. G. Woodman). *Air, Water, and Food for Colleges*. Revised 1904, 1909, John Wiley & Sons.

1903—(With Amelia Shapleigh). *Dietary Studies in Philadelphia and Chicago, 1892-3*. U. S. Dept. Agr., Office Expt. Stations Bul. 129.

1904—*Art of Right Living*. Whitcomb & Barrows.

1906—*Good Luncheons for Rural Schools*. Whitcomb & Barrows.

1911—*Conservation by Sanitation*. John Wiley & Sons.



## NEWS FROM THE FIELD.

The department of household science announces a gain of 20 per cent in registration over that of last year at this time.

Two new names have been added to the list of instructors **University of Illinois.** in the department, namely, Miss Cora E. Gray from the University of Chicago and Miss Pauline Wurster from the University of Michigan. Miss Usher is absent for the year on leave, and her work is taken by Miss N. E. Goldthwaite, who has been for three years research assistant in the department.

A new feature of the department is the introduction of the movable school in its extension work. The first one is to be held under the auspices of the County Y. W. C. A. of Woodford County at Minonk, Illinois, October 16-23. Plans for the annual School for Housekeepers to be held January 15-27 are also under way.

A study of the economic value of household work is being made by John B. Leeds, as the basis of a doctor's thesis at Columbia University. Mr. Leeds has prepared a schedule which he is sending out to **Columbia University.** housekeepers, seeking information regarding the time spent in the various forms of household work, the methods of organization and management of the home, etc. Any reader of the JOURNAL who is interested may obtain a copy of the schedule by addressing Mr. J. B. Leeds, Kent Hall, Columbia University, N. Y.

The School of Household Science and Art has taken on the management of the Institute Lunchroom, in order to give full time students in household science courses experience in large quantity cooking. A **Pratt Institute.** group of seven students goes in for a week, preparing all the food for something over two hundred people, and assisting in the service. The senior normal students have only the single meal, but the institutional household science students repeat the work at frequent intervals. Students in the last-named course also have experience in buying for the lunchroom, and the classroom work, and in keeping the accounts.

The Institute has installed a small laundry with machines run by electricity, so that students will be given practice in laundry work as it applies to institutions. The normal course in household art, reestablished after a lapse of four years, will send its first class in June. The students do the practical work in dressmaking in the class with trade students.

The department of Home Economics in the University of Washington was established in the fall of 1909. The principal purpose of the department is to train teachers. A four year teacher's course has been outlined, leading to the degree of bachelor of science in Home Economics.

With the exception of two courses outlined in the department, candidates for the degree of B.A. may elect from the course in Home Economics studies to an amount not to exceed the equivalent of twenty-four unit-hours.

The department has grown rather faster than was anticipated. There were twenty-seven students in the department the first semester that the work was offered. A year later the enrollment reached 107.

This year one young man has been taking the courses on foods.

A Home Economics Club open to students of Home Economics was organized in the university, March 14, 1910. The aim of this club is educational and social. Some very interesting lectures have been given.

The Home Economics Department is equipping a model house for practice work. The building is a modern six-room cottage and will be fitted up to serve as an example of how the average American home should be furnished and managed.

A recent number of *Nature* announces that 50,000£ has been raised for the endowment of home science in connection with the Woman's Department. The queen has consented to the use of her name in the soliciting of funds for a new dormitory to cost 20,000£, and a like amount is to be used for building and equipping laboratories. It is hoped to obtain 10,000£ additional to increase the funds for salaries and current maintenance.

The London *Times*, in an editorial note, warmly eulogizes the new departure, which it predicts "will be received throughout the country with universal satisfaction and sympathy."

In response to an invitation extended by the Home Economics department of the University of Washington, a number of the teachers of domestic science and art in the state met December 29, 1910, at the time of the State Teachers' Association, and organized a State Branch of the American Home Economics Association. The following officers were elected:

Mrs. Ellen Dabney, supervisor of Household Science and Arts in the Seattle public schools, president; Miss Minerva Lawrence, teacher of domestic science in the Bellingham Normal School, vice-president; and Miss Grace K. McKibben, teacher of domestic science in the Seattle High School, secretary and treasurer.

The Branch Association held a two days' conference in Bellingham, April 13 and 14.

On February 7, 1911, through the efforts of Miss Emma S. Jacobs, Director of Domestic Science, a local branch of the American Home Economics Association was formed. During the winter five meetings were held, principally to form a constitution and to elect officers. The officers elected were as follows: President, Miss Alice F. Seiler; vice-president, Miss Alice Burritt; recording secretary, Miss Nellie Rutherford; corresponding secretary, Miss Elizabeth Saxton; and treasurer, Miss Marion Pollard.

This year meetings will be held every other month beginning with October. All interested in the advancement of Home Economics will be asked to join and formal programs will be arranged.

The initial meeting of the season was held October 3. Miss Jacobs gave a history of the Home Economics movement, and Mr. H. Rabild of the Dairy Division, U. S. Department of Agriculture, discussed the production and care of sanitary milk. Plans were also formulated for the forthcoming meeting of the American Home Economics Association in Washington in December.

Consul General Frank Dillingham, Coburg, in a recent issue of the Consular and Trade Reports, states that "the Government of the Duchy of Saxe-Meiningen has been for some time past experimenting with a plan for teaching girls in small country villages the art of cooking. At the present time there are three female teachers in the employ of the Government, each one of whom has a prescribed district. The course in cooking in a village lasts six weeks and each teacher visits seven villages, thus keeping her employed 42 weeks in the year, the remaining 10 weeks being her vacation. A teacher receives 159 marks (\$37.84) for each course, or 1,100 marks per year. Each pupil pays 12 marks for the six weeks' course, or 48 cents per week, and is allowed to eat what is cooked at the school. No school is opened in a village unless at least 12 pupils are guaranteed in advance, because less than that number would not warrant the expense of starting it.

"I visited one of these schools at Veilsdorf a short time ago. It was held in a large room in a wing of the local inn, the school hours being from 8 a.m. to 5 p.m. Every article in the room was portable, capable of being easily transported to the next village with very little trouble or expense. In one corner of the room was a cooking stove, in which coal was burned, and at one side of the room was a large, wide bench, on which the vegetables, etc., were prepared, and above this bench hung the necessary cooking utensils. At one end of the room was a large cupboard filled with china and necessities for the table, and at the other end of the room there was a long table at which the pupils were sitting. The teacher had just given them the list of dishes that they were to cook that day for dinner, and was questioning them as to the market price of the articles needed for them. The cost of each ingredient used was reckoned, assuming that enough was to be made for a family of four. The dinner was to consist of soup, meat, rice, and dessert, the cost of which was reckoned at 24 cents for four people, or 6 cents for each person. Everything was taken into account when

reckoning the cost, including salt, spices, etc., as well as the cost of the fuel used. The Saxe-Meiningen Government supplies everything except the cups and plates, which the pupils like to bring themselves, because each pupil usually has her favorite china cup, saucer, and plate at home. In most of the villages in Thuringia the only kind of vegetable known is cabbage, or, in another form, sauerkraut.

"This traveling cooking school suggests and strongly encourages the growing of all the various kinds of vegetables, and as most of the houses have small plats of ground, either at the front or back, this suggestion has been generally observed. Strange as it may seem to Americans, scrambled eggs are an unknown dish in most of the villages in Germany. In fact, the bill of fare of the average German farmer is extremely meager and varies very little. It is said that the German farmer will eat only what he has from childhood, and great difficulty is, therefore, experienced by the teachers of the school in inducing their pupils to partake of any dish that is cooked for the first time. The cooking of the average housewife in a small village in Germany is so rudimentary that the latest attempts of the Government of the Duchy of Saxe-Meiningen to teach at least the rudiments of cooking to young country girls is considered worthy of commendation and support.

"A number of the principal citizens in the Duchy donate sums of money toward defraying the incidental expenses of the school as a sort of upkeep, but any and every deficit is met by the Government. At the end of the six weeks' course a large dinner is given, to which the mayor, parents of the scholars, and principal people of the village are invited. A small charge is made for this. Moreover, small sums of money are also usually given by well-wishers of the school who may be present."

An interesting development in Y. W. C. A. work along domestic science lines has been reported from Monoghan Mills, a cotton mill village of South

Carolina. Besides the usual library, gymnasium, shower baths, art courses, Bible study, etc., this association, by means of a domestic science secretary, carries on several different lines of work in Home Economics.

The association work begins with the little children, there being a Little Women's Club where the president, ten years old, conducts the meeting and the secretary, of eleven years, calls the roll and keeps the minutes. The children, as they grow too old for this club, are likely to be passed on into the club for junior girls, which continues the work of developing able and intelligent women.

In the public schools of the village cooking and sewing lessons are compulsory for all girls over eight years old. Thus, any girl who attends school fairly regularly, by the time she has finished the seventh grade should have a fair working knowledge of practical home cooking and of the simpler kinds of garment making. These village girls, therefore, have advantages enjoyed by few city girls. For those who have not had the advantages of the public schools, the association, in its night schools, offers similar courses in cooking and sewing, of which the domestic science secretary is the superintendent.



The especial original feature of the work of the association, however, is that which is carried on outside of the building, and which might be termed "extension work." The aim of this branch of the work is to be of assistance to the women who can not come to the association, especially the mothers and other home makers.

The domestic science secretary has organized neighborhood classes or, in some cases, has even gone into the individual homes to teach the women some of the more important principles of cooking and housekeeping. As a result of this there have been bread-making contests, etc., and a great demand has arisen for recipes for a variety of economical dishes; so much so that a cookery text book, full of practical every-day recipes and prepared to meet the special local condition has a large circulation in the neighborhood. As Miss Graves, general secretary of the association, says, "One who knows the monotony of the life of a busy housekeeper will realize that this coming together of neighbors to hear of outside things is helpful and enjoyable. Time was when it was not considered necessary, or even proper, for a woman to be interested in affairs outside her home, but today women everywhere recognize the importance of knowing what is going on about them, realizing that the labor of making bread, for instance, is really lessened if the woman has been refreshed by a bit of outside life."

That beautiful meat store, in the heart of Chicago's shopping center, which was established to eliminate middleman's charges on merchandising and thus sell at lower prices, ran its brief career. And yet the trial of about eight months was long enough to afford a convincing test. In brief, the attempt was to establish practically the old-time market, such as still holds favor in some cities, chiefly in the South, where the producer and the consumer meet without middlemen, and a market basket and a purse are the essentials to the evening dinner. The telephone order, the free delivery, and the credit system were eliminated from the Chicago experiment.

Goods of quality attractively displayed at reasonable prices characterized this venture. These are essentials of successful merchandising. The opening was encouraging, but the new wore off soon. The shop was an anachronism—an error in the order of time. It was situated in the midst of the big department stores, the greatest retail merchandising establishments in the world, which have been built on modern methods—telephone order, free delivery, and credit. How much it cost its sponsors to attempt to turn back the hands on the clock of time they are not telling. Some cities yet maintain the old-time market places, and the family horse and phaeton, with the market basket aboard, jogs down to market daily or twice-weekly and the consumer trades directly with the producer; but the atmosphere of Chicago does not seem agreeable to that form of merchandising. The city built a splendid public market place a few year ago. It is now a manufacturing plant. Time and convenience seem to be worth money in Chicago.—*Breeder's Gazette*, 58 (1910), no. 22, p. 1154.

**A Meat  
Market that  
failed.**

## BOOKS AND LITERATURE.

**Chemistry of Food and Nutrition.** Henry C. Sherman, Ph.D., Professor in Columbia University. Pp. ix + 355. The Macmillan Co., New York. 1911.

A survey of the popular literature of the day, as it reveals itself in newspapers, magazines, and even books, will disclose the awakening of an intense interest in the subject of nutrition. Some of the current writing which aims to review the present status of scientific investigation in this field is commendable. This applies above all to the numerous excellent bulletins issued under government authority, which deserve wider attention than they yet obtain. The popularized contributions to much-read and quoted weeklies and monthly periodicals often suffer from the lack of competent criticism in their preparation. The writers "cover" an assigned task in a way intended to furnish so-called good reading as the foremost result, form being more important than accuracy of content. Diet fads are thus successively created or destroyed. The idea of reform itself seems to appeal to the American mind with greater fervor than the milder lessons of permanent truth. A further type of contributions is positively bad. In this class one meets with the fasting nonsense and other such "stuff" which is responsible for actual harm to individuals.

In view of this situation it is helpful to find a book like Professor Sherman's which even the more intensive student of nutrition can read from cover to cover without experiencing any serious upset of his stock of facts or theories. Although the volume can scarcely be classed as a work for beginners, it is presented in a "semi-popular" form that ought to excite an intelligent interest even in those who have not carefully reviewed the underlying science upon which nutrition study now rests. Happily the day has arrived when it is no longer necessary to make apology for the use of a chemical formula in a discussion of this subject.

*The Chemistry of Food and Nutrition* is presented in eleven chapters, together with a series of useful reference tables on the composition of food materials in an appendix. The topics under discussion include the organic food-stuffs and their behavior in the digestive tract; the fate of the food-stuffs in metabolism; the fuel value of food and the energy problems; food requirements and dietary standards; the rôle of the inorganic nutrients; and interesting criteria of the nutritive value of foods.

The author's reviews of the status of recent investigation are as a rule presented with commendable judgment and perspective. Indeed, this is a most valuable feature of the book, and is well exemplified in Chapter IV on the metabolism of the food-stuffs—an exceptionally effective introduction to the newer ideas. The historical résumés of various topics are in places involved in a series of details which make them less interesting to the

reader who is searching for the lessons of the book. This is true, for example, of the chapters on "mineral metabolism" which has, perhaps, been unduly emphasized, so that it must be regarded as one of the characteristic innovations of the volume. Of course, this can be excused because of the usual indifference to the problems of the inorganic salts in nutrition, and can be ascribed to Professor Sherman's well known interest as an investigator in this domain.

A few quotations may be selected to serve in place of detailed comment about various other features. The author writes: "Ordinarily it is best to use milk as the main source of protein throughout the whole of infancy and early childhood. Young and middle-aged people usually utilize quantities of protein considerably greater than they require. . . . Elderly people show both a diminished protein requirement and a diminished power of dealing with excess. Surplus protein taken in the food is not so rapidly absorbed and katabolized, and, while there appears to be no essential difference in the form in which the nitrogen is finally excreted, the susceptibility to excessive putrefaction of protein appears to be increased. It would seem that in the dietary of the aged the protein should be reduced to at least as great an extent as are the calories" (p. 203).

The treatment of the much discussed problem of the protein standard is unbiased and reasonable. Incidentally it is interesting to find the expression "food habits" incorporated with the heading of a chapter on dietary standards. From statistical considerations the conclusion is reached that "the average of healthy men and women keep themselves slightly too thin while young, and allow themselves to grow slightly too stout as they grow older" (p. 217).

Regarding the comparative value of "organic" and "inorganic" iron preparations Professor Sherman has this to say: "Whether medicinal iron actually serves as material for the construction of hemoglobin is not positively known, but we have what appears to be ample evidence that food iron is assimilated and used for growth and for the regeneration of hemoglobin to much better advantage than are inorganic or synthetic forms, and that when medicinal iron increases the production of hemoglobin, its effect is more beneficial in proportion as the food iron is more abundant—a strong indication that the medicinal iron acts by stimulation rather than as material for the construction of hemoglobin. Evidently, then, we must look to the food and not to medicines or mineral waters for the supply of iron needed in normal nutrition" (p. 246). The table of the iron content of typical food materials on page 251 deserves careful study by students of dietetics. The conclusion is reached that "the typical American dietary does not contain any such surplus of iron as would justify the usual practice of leaving the supply of this element to chance. The available data rather indicate that foods should be selected with some reference to the kinds and amounts of iron compounds which they contain" (p. 252).

With respect to phosphorus it is concluded that "present food habits are more likely to lead to a deficiency of phosphorus compounds than to a deficiency of protein in the diet, and it is not improbable that many cases of malnutrition are really due to an inadequate supply of phosphorus compounds" (p. 281). Likewise it is suggested that "there should be more

attention to the choice of such foods as will increase the calcium content of the dietary" (p. 289). Here is a reminder that will bear frequent repetition: "A quart of milk contains rather more calcium than a quart of clear saturated lime water, and by far the most practical means of insuring an abundance of calcium in the dietary is to use milk freely as a food" (p. 291).

The reviewer believes that the splendid researches of Pawlow on psychic factors in secretion have often been clothed with too great practical import for the ultimate stages of digestion. He quite agrees with Sherman that "the data of quantitative digestion experiments upon healthy men afford little, if any, evidence in support of this view and much evidence that the coefficient of digestibility is but little influenced by the palatability of the food, or the monotony of a uniform diet, so long as the food is actually eaten and retained and does not undergo excessive bacterial decomposition.

It seems probable that the psychic influences affect the comfort and rapidity of the earlier stages of digestion much more than the final percentage utilization of the food" (p. 306).

In reaching the conclusion that the well-being of the body would probably be in no wise impaired if it were possible to exclude all bacteria from the digestive tract, the author has referred to the familiar experiments of Nuttall and Thierfelder. The later contrary experiences of Schottelius with hens should, however, not be overlooked in this connection.

A companion volume containing a more detailed description of individual foods and the chemical and legal control of the food industry is promised.

LAFAYETTE B. MENDEL.

**What to Eat and Why.** J. Carroll Smith, M.D., Boston, Mass. Saunders, Philadelphia, 1911, 8vo. Pp. 310, \$2.50.

A more correct idea of the contents of this book would be conveyed by the title, *What to Eat in Disease and Why*. Its purpose is to aid the physician in prescribing the diet of his patients. After a somewhat discursive introduction, common pathological conditions, such as obesity, emaciation, diabetes mellitus, etc., are discussed with regard to feeding problems. The usual causes, most frequent complicating factors, and typical digestive and metabolic disturbances of each disease are set forth, and an attempt made to show the bearing of all of these upon the choice of foodstuffs. A diet list and some practical suggestions about the preparation or eating of the foods conclude each topic. A consistent effort has been made to emphasize the fact that many factors are involved, and must always be considered.

Unfortunately, one's confidence in the author's scientific accuracy is disturbed by such statements as the following:

"Vegetable oil (olive) is not so well absorbed from the intestine as animal fats," (p. 16); "In deep, quiet sleep metabolic processes are most active," (p. 40); "Fruit sugars are of great value to alkalinize the blood," (p. 74). In regard to the first, fats of low melting point are the more completely absorbed (olive oil to 97.7 per cent according to Abderhalden); as for the second, "Metabolism is less active in sleep than in the waking condition, and the falling off is greater the sounder the sleep" (Tigerstedt); while the



third is manifestly impossible. It is also rather difficult to see why "an excess of fat in the system necessitates a great number of extra blood vessels" (p. 104).

The author quotes from many sources, but not always with the best of judgment, as when he suggests the adoption of Crichton Brown's criterion as to the amount of protein desirable in the diet, *i.e.*, that if a child one week old takes 2.07 grams per kilo of body weight, a man weighing 70 kilograms will need 145 grams. No account is taken of the high percentage of protein stored in the body of the growing child (see p. 18).

Certain other citations seem much out of place in so elementary a treatise, as for instance, "Rjasantzeff proved that bread produces more acid in the stomach (lactic and other acids) and more nitrogenous urinary waste than many other foods—three times more than milk, and as it is also rich in nucleins it is considerably restricted in the diet for gout." Pawlow declares that the gastric acidity is lowest with bread; inasmuch as it has about three times as much protein as milk, the 'discovery' of a greater amount of nitrogenous end products does not seem particularly startling; and the statement that it is rich in nucleins is false.

While not denying the importance of palatability, one would hesitate to accept the statement that a less amount of savory food will yield more calories than a much larger amount of an unpalatable food (p. 134).<sup>1</sup>

The book may commend itself to the practitioner on account of the author's practical experience, but it cannot be considered a reliable text for serious students of nutrition, in spite of its attractive title.

MARY SWARTZ ROSE.

**Domestic Science.** Ida Hood Clark, Supervisor of Elementary Manual Training in the Milwaukee Public Schools. Little, Brown and Company. 1911. Price \$1.50 net.

According to the preface "There is need for a course of lessons in domestic science planned for the elementary schools. The course may be used in all grades above the third, and some of the lessons may be simplified and taught in the first three grades. These lessons may also be used in the first-year and second-year high school classes, and in other secondary schools. They are suitable for public, private, and rural schools."

This is a generous claim for any one text-book, but the next sentence is truly astounding and will not win favor from educators: "Teachers who have absolutely no knowledge of domestic science can teach them by carefully reading them over and performing the work as directed."

According to the interpretation implied by the table of contents domestic science is cookery and little else.

It is unfortunate that a book should be published which is worthless for teachers or pupils. No reputable school of domestic science would "pass" examination papers having as many errors in facts, English, and simple arithmetic as any chapter contains. The lack of logical sequence in the lessons is apparent from this order, "Gingersnaps, custards, soups, steamed

<sup>1</sup> Cf. Sherman, *Chemistry of Food and Nutrition*, p. 307.

brown bread, fruits, bacon, and fats;" or again, "Lamb stew, fruit cake, sugar and candy, cheese souffle, bread-making, angel cake, croquettes, muffins, vegetables."

The attempt to give the history of foods results in a curious hodge-podge of misinformation. There are few references to good authorities and these are indefinite. Even where the bulletins of the U. S. Department of Agriculture once or twice are mentioned no numbers are given. On page 116 we read "It will be seen from the table of analysis," etc., but no such table appears in the volume nor is there any definite reference to one outside. Aside from careless statement of fact and errors in dividing a home recipe for school use (see cake, custard, suet pudding, etc.) the recipes and general directions for work are expressed clumsily, not clearly, and in bad English.

The proof reading is inexcusable. A home recipe for junket reads, "1 tp. milk 1 rennet tablet dissolved in 1 tbsp. water. 4 tbsp. sugar 1 tsp. flavoring." "Coloring matters used are caramel, turmene," (Is this tumeric?) The cranberry tree is spoken of as a species of "biburnum" (?). But this is less serious than the carelessness in stating temperature on p. 92, "body temperature (70°)"; p. 137, "body temperature, or from 65° to 70° F."; p. 124, "If the temperature is just right the mass of the omelet should be below 75°"; p. 276, "butter melts at 337 centigrade."

Although almost every page will display errors to even the casual reader, here are some quotations which may indicate the general style of the book.

"We must learn physiology, the most important of all studies, wisely through an interest in our own growth in stature and in power, and this must come through nutrition." "When boiling place ingredient in water. Finish discussion while ingredient is cooking."

"Nitrogenous and carbohydrate principles are the two most important in cookery."

"Flour and very hot fat form a soluble mixture, dextrine, which is dissolved in liquids forming a smooth product like gelatine."

"Eggs possess their highest nutritive value when raw. Albumen subjected to a very high temperature of heat becomes indigestible. The yolk of the egg is rich in fat and in sulphur and therefore the freshness soon departs, so that it should not be retained in the stomach any longer than the average time for digestion. The white contains about two parts fat while the yolk contains about thirty parts."

"In the early settlement of our country, by the Indians and Colonists, places near rivers that contained fish in abundance, seemed to have been selected for homes. We read in Bible history, and in later times in histories of foreign countries, that fish formed the principle article of food."

"The parts of the fish used for food are the strips of muscle lying along the backbone on each side from the head to the tail. In white fish this muscle is white, except in herring and mackerel."

"Freshness of Fish. This cannot be too largely overestimated, stale fish being even worse than stale meats."

"Baked fish is a convenient method to use in school cooking."

"Pupils may bring in samples of baking-powder and test the smoothness, and also the effervescing powder."

"Lemons in Tea. There are sugar and vegetable acids in both lemons and tea, so the effect is the same. Both are changed into  $\text{CO}_2$ , which is not supposed to be wholesome."

"There should be a care to make the table and food pleasing to the eye."

**Some Living Things; First Lessons in Physiology.** Ella B. Hallock, A.S. Barnes and Company, New York. Pp. 213.

The author has presented material in response to a number of needs, three of which she states, as (1) To study the human body in relation with other living things, and the things on which it depends for life; (2) to teach about the human body in such a manner and in such relations that the pupil will be interested in the structure and work of its different parts; and (3) to offer the material in the form of lessons conveniently arranged for the busy teacher.

Throughout the book, the method used is that of direct questioning and the requirement of answers written in a specified number of formal statements. The author does not state the grades she had in mind in the preparation of the lesson. The subject matter given is quite simple enough to be grasped by children in the second and third grades, but the method suggested certainly could not be employed below the fourth. Even then, if not skillfully handled, the work would easily fall into formal and lifeless question and recitation.

In the first three lessons, by means of pictures, questions, and written answers, is developed the idea of the differences between things alive and lifeless, also between plants and animals.

This is followed by the lessons on "principal parts." Almost one-fourth of the book is given to this phase of the work. An attempt is made to consider separately each exterior part of the human body in connection with a similar part of the body of other animals. Accordingly, the children study in isolation and by means of pictures of the dismembered part, the arm of a man, the fore-limb of a horse, the arm of a monkey. This leads to a study of the skeleton arm and hand, the counting of the bones, the study of the muscles, then to the work and care of the hands. The leg, foot, trunk, head, and neck are similarly studied. After thus breaking the body up into numerous and definite parts, there is no attempt made to bring them together into the form of a living, active being. The child is not given the joy of feeling that these parts do not really exist as pieces, but that they are all wonderfully put together to make one beautiful, harmonious whole. Accordingly, the book is decorated on every page with pictures of severed legs, hands, fingers, and feet; beheaded horses, cows, and men; detached ears, noses, and eyes. The attempt has been made to write down to the child's level, but the desire to help the busy teacher is in many cases more vividly reflected than the desire to give to the child every opportunity for individual thought and free expression.

The third general division of the book is given to the study of the organs of special sense and speech. Here, in the discussion of the skin, mouth, nose, eye, and ear, the same methods of presentation and illustration are used.

Under "principal need" are treated the subjects of air, food, water, sunshine, clothing, work and rest. In these lessons the writer seems much nearer the interests of childhood, while the picture story about the little girl who loved the wind, water, play, and good food, adds interest and life to the entire chapter.

Temperance teachings, a fifth division of the book, is suggestive and helpful. Instead of following the line of old formal temperance teaching, the social and civic aspects of the subject are given emphasis.

Emergencies is the subject of the concluding chapter. The suggestions given are simple and perhaps helpful, yet it is questioned whether such material holds a legitimate place in a book of so elementary a character.

Many of the chapters are concluded with quotations. In some cases these are well chosen—in others the quotations are not only distantly connected with the thought of the chapter, but wholly lacking in childish spirit and interest.

Certain good health rules are suggested throughout the book, and the children encouraged to pledge themselves to try to adopt certain ones. A pledge can mean very little to primary children, for whom the book seems to have been written. They are mentally unable to carry over experience in such a way as to be able to discriminate sufficiently to make and keep a pledge. Such a course of procedure with little people would certainly be lacking in genuine meaning and real dignity.

After all this is said, it still remains that the book has many points of excellence over the old works on formal physiology. The material is graphic, simple, attractively arranged, and in most cases, that in which the ordinary child finds daily interest. While the method is questionable, the book is rich in suggestive material, and in the hands of a resourceful teacher, might prove a valuable aid.

**Scientific Cooking with Scientific Methods.** Sarah E. Woodworth Craig. Cincinnati, 1911, pp. ix + 404.

A collection of recipes, with an introduction which discusses the composition and characteristics of food, and similar topics. This introductory material is neither very adequate nor well arranged. Referring to pectose as an acid is perhaps a slip of the pen.

**The Preservation of Eggs.** R. Berger. Reprint from *Journ. Ind. and Eng. Chem.*, 3, 1911, no. 7, July.

Inasmuch as various writers differ as to the relative merits of different preservatives for eggs, the author experimented with eggs in crystallized silicate of soda, or "alkasil,"  $\text{Na}_2\text{O}, \text{SiO}_2, 9\text{H}_2\text{O}$ , and 4 grades of commercial silicate of soda varying practically between the formulas  $\text{Na}_2\text{O}, 4\text{SiO}_2$  and  $2\text{Na}_2\text{O}, 3\text{SiO}_2$ . Caustic soda and lime were also added to silicate of soda high in  $\text{SiO}_2$  in order to bring down the  $\text{SiO}_2$  percentage.

No great difference was found in regard to the pore-sealing action of these different treatments, and it is believed that common silicate of soda gives satisfactory results. Directions for preserving eggs are given.



**Special Problems in the Service of Food.** Anna Williams. *Ill. Agr.*, 15 (1911), no. 7, pp. 25-29.

These problems deal chiefly with cost and time values. One of them is "How much variety can be secured simply by different methods of preparing the same food stuffs?" This article shows how the problem was solved.

**What Salem Dames Cooked in 1700, 1800, and 1900.** Salem, Mass., 1910, pp. 40.

This publication, compiled at the Esther C. Mack Industrial School, contains a number of old and modern recipes.

**Tropical Agriculture and Cookery.** Mrs. F. R. Ramsdell, Nueva Gerona, Isle of Pines. 1909, pp. 56.

The author has collected a number of recipes for the preparation of avocado, breadfruit, cashew apple, chayote, and other vegetable foods used in the Tropics. In the case of avocado or alligator pear the recipe includes directions for cooking the fruit as well as for serving it in the more usual ways, for making avocado pickle, and for extracting the avocado oil, which it is said does not readily become rancid and which can be used as an illuminant or for soap making.

**Chocolate and Cocoa Recipes, Maria Parloa, and Homemade Candy Recipes, Janet McK. Hill.** Dorchester, Mass., 1910, pp. 64, pls. 12, fig. 1.

A collection of recipes by the authors named and also a number gathered from other sources. Some historical and other data regarding cocoa and chocolate are also included.

**The Feeding of School Children.** Helene Simon. *Die Schulspeisung.* Leipsic. 1909, pp. viii + 93.

Pioneer work in the feeding of school children, the conditions which must be met, and other questions are discussed with reference to work in Germany and other countries.

**Invalid Dietetics.** Emilie Kieslinger and K. Wirth. *Die Krankenkost.* Munich, 1910, pp. x + 250.

General questions of digestibility and similar topics are discussed as are also special problems of invalid dietetics and children's diet, and many recipes are given for the preparation of foods.

**The Hospital Dietition.** W. F. Boos. *Boston Med. and Surg. Jour.*, 162 (1910) No. 12, pp. 386, 387.

The importance of this subject is pointed out, some of the duties of the dietitian outlined, and suggestions made for establishing a course in hospital dietetics, in a paper which was read before the section on institution management at the second annual meeting of the American Home Economics Association, Boston December 31, 1900.

**How to Live on a Small Income.** Emma C. Hewitt. Philadelphia, 1909, p. 208.

The selection of a home, health problems and sanitation, furnishings and their care, economy in work, economy in the preparation of food, and other questions are discussed.

**Housekeeping in Switzerland.** Mary Swift Anderegg. *Ohio Farmer*, 128 (1911), no. 14, p. 284, fig. 1.

An interesting summary of data regarding market conditions, food supply, and similar topics.

**Some Points in Choosing Textiles.** Charlotte M. Gibbs, *Univ. Ill. Bul.* 8 (1910), no. 15, pp. 18, figs. 5.

The author gives directions for choosing cotton, linen, woolen, worsted, shoddy, and silk materials, and in conclusion summarizes the methods of adulteration most likely to be found and the tests for them.

**Chemistry for Launderers, also for Cleaners and Dyers.** C. F. Townsend. Chicago, 1910, pp. 189, figs. 5.

In this revision of an English work it is stated that changes have been made to bring the discussion into harmony with American customs. Soaps, acids, bleaching, stains and their removal, fuel, fabrics, dyes and dyeing, the chemistry of the wash room, and similar topics are discussed, and directions are given for some simple analytical work.

**Home Waterworks—A Manual of Water Supply in Country Homes.** C. J. Lynde, New York, 1911, pp. xii + 270, figs. 106.

Teacher and student will be interested in this handbook, which the author considers suitable for reading and study by children in continuation classes and in high schools. General questions of water supply are considered and also problems of bringing water into the house, methods of pumping, plumbing and sewage disposal, water power, and related matters.



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